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OF

LONDON

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THE ROYAL ENTOMOLOGICAL SOCIETY OF LONDON

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1933.—Vol. 2, subscription rate £1 4*s.* 0*d.*, to Fellows, 16*s.* 0*d.*; monthly parts 3*s.* 0*d.* each, to Fellows, 2*s.* 0*d.*

LIST OF FELLOWS

OF THE

ROYAL ENTOMOLOGICAL SOCIETY OF LONDON.

HONORARY FELLOWS.

Date of Election.

1905 Bolivar, Ignacio, *Museo nacional de Historia natural, Hipodromo*, 17, *Madrid.*

1925 Gestro, Prof. R., *Direttore del Museo Civico di Storia Naturale, Genova, Italy.*

1931 (1929) Horn, Dr. Walther, 20, *Gosslerstrasse, Berlin-Dahlem, Germany.*

1926 Horvath, Dr. Geza, *Museum Nationale Hungaricum, Budapest, Hungary.*

1915 ‡ Howard, Dr. L. O., *Ex-Chief, Bureau of Entomology, U.S. Dept. of Agriculture, Washington, U.S.A*

1914 Lameere, Professor A., 74, *rue Defarq, Bruxelles.*

1918 Marchal, Dr. Paul, 45, *rue de Verrières, Antony, Seine, France.*

1931 ‡ (1877) Oberthür, M. Réné, *Rennes, Ille-et-Vilaine, France.*

1931 Rebel, Prof. H., *Naturhistorisches Museum, Burgring* 7, *Vienna I, Austria.*

1913 Semenoff Tian-Shanski, A. P., *Vassili Ostrov*, 8 *lin.*, 39, *Leningrad, U.S.S.R.*

1931 ‡ Silvestri, Prof. F., *R. Istituto Superiore Agraria, Portici, Naples, Italy.*

1931 Wheeler, Prof. W. M., Ph.D., Sc.D., LL.D., *Museum of Comparative Zoology, Harvard College, Cambridge, Mass., U.S.A.*

SPECIAL LIFE FELLOWS.

Date of Election.

1926 (1891) Frohawk, F. W., *Essendine, Cavendish-road, Sutton, Surrey.*

1923 (1889) Johnson, The Rev. W. F., M.A., *Roxboro' Terrace, Rostrevor, Co. Down, Ireland.*

1926 (1890) Newstead, Prof. R., M.Sc., F.R.S., A.L.S., Hon. F.R.H.S., *St. Mary's Cottage*, 67, *Handbridge, Chester.*

*1932 (1895) Nurse, Lt.-Col. C. G., *Redcote, Rusthall Park, Tunbridge Wells.*

1931 (1905) Powell, H., *Pharmacie du Croissant, Meknès-Medina, Morocco.*

1933 (1905) ‡ Sheldon, W. George, F.Z.S. (Treasurer, 1918–28; V.-Pres., 1920), *West Watch, Oxted, Surrey.*

1933 (1878) ‡ Walker, J. J., M.A., R.N., F.L.S. (President, 1919–20; V.-Pres., 1916, 1921; Sec., 1899, 1905–18; Council, 1894, 1921), *Aorangi, Lonsdale-road, Summertown, Oxford.*

1933 (1906) ‡ Wheeler, The Rev. George, M.A., F.Z.S. (Secretary, 1911–21; V.-Pres., 1914; Council, 1921), *Ellesmere, Gratwicke-road, Worthing.*

FELLOWS.

(*The names of those who have not yet paid either the Entrance Fee or the first year's subscription are not included.*)

Marked * *died during the year* 1933.
Marked † *have compounded for their Annual Subscriptions.*
Marked ‡ *have been formally admitted into the Society* (*to Dec.* 1933).

Date of Election.

1913 ‡ Adams, B. G., *The Old Rectory, Swell, Fivehead, Somerset.*
1902 ‡ Adkin, B. W., "*Highfield,*" *Pembury, Tunbridge Wells.*
1885 ‡ Adkin, Robert (V.-Pres., 1922, 1928; Council, 1901–2, 1911–13, 1921–3, 1927–9), *Hodeslea, Meads, Eastbourne.*
1921 Alexander, Prof. C. P., *Fernald Hall, Massachusetts Agricultural College, Amherst, Mass., U.S.A.*
1931 Alfieri, Anastase, *P.O. Box* 430, *Cairo, Egypt.*
1920 ‡ Altson, A. M., 41, *The Residency, Von Brandis'-square, Johannesburg, S. Africa.*
1919†‡Andrewes, Dr. C. H., 32, *Ossulton-way,* N. 2.
1910†‡Andrewes, H. E. (Council, 1920–2), 8, *North-grove, Highgate,* N. 6.
1922 ‡ Andrewes, H. L., *The Warren, Bere Regis, Wareham, Dorset.*
1932 ‡ Andrews, E. A., *Broomhills, Billericay, Essex.*
1899 ‡ Andrews, Henry W. (Council, 1930–2), 6, *Footscray-road, Eltham,* S.E. 9.
1901 ‡ Anning, William, 15, *Arthur-street West,* E.C. 4.
1908 † Antram, Charles B., *Heathfield, Moorland-road, West Moors, Dorset.*
1930 Armstrong, K. F., 69, *Barkston-gardens, Earl's Court,* S.W. 7.
1927 ‡ Armstrong, R. R., B.A., M.D., B.Ch., 65, *Lee-road, Blackheath,* S.E. 3.
1913 ‡ Armytage, Edward O., *c/o The Westminster Bank, Ltd.,* 25, *Sussex-place,* S.W. 7.
1907 ‡ Arnold, G., D.Sc., A.R.C.S., Box 240, *Bulawayo, South Africa.*
1899†‡Arrow, G. J. (Council, 1905–7), 9, *Rossdale-road, Putney,* S.W. 15; and *British Museum* (*Natural History*), *Cromwell-road,* S.W. 7.
1911 ‡ Ashby, Rev. E. B., 36, *Bulstrode-road, Hounslow, Middlesex.*
1907†‡Ashby, Sidney R., 37, *Hide-road, Headstone, Harrow.*
1925 Ashworth, J. H., *Walton Fold, Longridge, Preston, Lancs.*
1921 Atkinson, D. J., *Ataran Forest Division, Moulmein, Burma.*
1927 ‡ Attia, R., A.R.C.S., B.Sc., *Plant Protection Section, Ministry of Agriculture, Cairo, Egypt.*
1928 ‡ Aubertin, Miss Daphne, M.Sc., F.L.S., *British Museum* (*Natural History*), *Cromwell-road,* S.W. 7.
1930 Austin, M. D., *Dept. Economic Entomology, South Eastern Agricultural College, Wye, Kent.*
1913 Avinoff, A., Director, *Carnegie Museum, Pittsburg, U.S.A.*

1904†‡Bagnall, Richard S., D.Sc., F.R.S.E., F.L.S., 9, *York-place, Edinburgh.*
1909 ‡ Bagwell-Purefoy, Capt. Edward, F.Z.S. (Council, 1930–2), *The Cottage, East Farleigh, Kent.*

1933 Bainbridge, W. G., 200, *Skipton-road, Colne, Lancs.*

1903–1913, 1924 :

‡ Baldock, G. R., *Oakburn Villa*, 467, *Hertford-road, Enfield Highway.*

1916 ‡ Balfour, Miss Alice, *Whittingehame House, Haddington, Scotland.*

1921 ‡ Balfour-Browne, Prof. W. A. F., F.R.S.E., F.L.S., F.Z.S. (Council, 1925–7, 1933–), *Winscombe Court, Winscombe, Somerset.*

1912 ‡ Ballard, E., *Department of Agriculture, Jerusalem, Palestine.*

1890 Barclay, Francis H., F.G.S., *The Warren, Cromer.*

1902 ‡ Barraud, P. J., *Central Research Institute, Kasauli, Punjab, India.*

1932 ‡ Bartlett, C., *Morwenstow*, 8, *Woodhill, Portishead, nr. Bristol.*

1907 ‡ Bartlett, H. Frederick D., *Island of St. Helena, S. Atlantic.*

1908 Bayford, E. G., 2, *Rockingham-street, Barnsley.*

1912 ‡ Baynes, E. S. A., *Monkshatch Cottage, Compton, Guildford, Surrey.*

1896†‡Beare, Prof. Sir T. Hudson, B.Sc., F.R.S.E. (V.-Pres., 1910, 1932; Council, 1909–11, 1925–7, 1932–), 10, *Regent-terrace, Edinburgh.*

1912 Bedford, Gerald, *Division of Veterinary Services, P.O., Ondestepoort, Pretoria, S. Africa.*

1913 ‡ Bedford, Capt. H. W., *W.T.R. Laboratories, Khartoum, Sudan.*

1899 ‡ Bedwell, Ernest C. (V.-Pres., 1922; Council, 1917–19, 1922–4, 1929–31), *Bruggen, Brighton-road, Coulsdon, Surrey.*

1920 ‡ Beeson, C. F. C., *Indian Forest Service, Forest Research Institute, Dehra Dun, U.P., India.*

1927 ‡ Bell, J. H., *Dudswell-rise, Northchurch, Berkhamsted.*

1904 Bengtsson, Simon, Ph.D., *Universitetsbibliothek, Lund, Sweden.*

1915 Benham, Prof. W. B., M.A., D.Sc., F.R.S., *University of Otago, Dunedin, New Zealand.*

1933 ‡ Benson, H. J. Craufurd, B.Sc., 45, *Gordon-place, Kensington*, W. 8.

1925 ‡ Benson, R. B., M.A., *British Museum (Natural History), Cromwell-road*, S.W. 7.

1913 ‡ Best-Gardner, Charles C.

1885 ‡ Bethune-Baker, George T., F.L.S., F.Z.S. (Pres., 1913–14; V.-Pres., 1910–11, 1915; Council, 1895, 1910–12, 1915, 1919–21), 9, *Eversfield-road, Eastbourne.*

1891 ‡ Blaber, W. H., F.L.S., 34, *Cromwell-road, Hove, Sussex.*

1904 ‡ Blair, Kenneth G., D.Sc. (Council, 1918–20, 1932–), *Claremont*, 120, *Sunningfields-road, Hendon*, N.W. 4.

1904 ‡ Bliss, M. F., M.C., M.R.C.S., L.R.C.P., *Branston, nr. Rugby.*

1903 Bogue, W. A., 34, *Handen-road, Lee*, S.E. 12.

1929 Bolivar y Pieltain, Prof. C., *Museo Nacional de Ciencias Naturales, Madrid.*

1921 ‡ Bolton-King, E., *Christ Church, Oxford.*

1902 ‡ Bostock, E. D., *Oulton Cross, Stone, Staffs.*

1921 Bouck, Baron J., *Springfield, South Godstone, Surrey.*

1894 † Bowles, E. Augustus, M.A., *Myddelton House, Waltham Cross.*

1921 ‡ Box, H. E., *Antigua Sugar Factory, St. John's, Antigua, B.W.I.*

1910 Boyd, A. Whitworth, *Frandley House, nr. Northwich, Cheshire.*

1920 Boyd, Lieut.-Col. J. E. M., M.C., *The British Military Hospital, Ahmednagar, Deccan, India.*

1905 Bracken, Charles W., B.A., 16, *De la Hay Villas, Plymouth.*

1919 ‡ Bradley, Prof. J. Chester, M.Sc., Professor of Entomology and Curator of Invertebrate Zoology, *Cornell University, Ithaca, New York, U.S.A.*

1920 ‡ Brenchley, Dr. Winifred E., D.Sc., F.L.S., *Rothamsted Experimental Station, Harpenden, Herts.*

1930 Breyer, Adolfo (Jun.), *Florida* 414, *Buenos Aires, Argentina.*

1930 Breyer, Alberto, *Florida* 414, *Buenos Aires, Argentina.*

1894 ‡ Bright, P. M., *Nethercourt,* 60, *Christchurch-road, Bournemouth.*

1924 ‡ Brindley, Mrs. M. D., 25, *Madingley-road, Cambridge.*

1909 ‡ Britten, Harry, 22, *Birch-grove, Levenshulme, Manchester.*

1925 ‡ Brooks, C. J., 11, *Carlton Mansions, West End-lane,* N.W. 6.

1933 ‡ Brown, Miss D. M. S., *Imperial College Biological Field Station, Slough, Bucks.*

1932 Brown, F. Martin, *Fountain Valley, Colorado Springs, Colo., U.S.A.*

1919 Brown, J. M., B.Sc., F.L.S., 176, *Carterknowle-road, Millhouses, Sheffield.*

1910 Browne, H. B., M.A., *Woodleigh House, Aislaby, Sleights S.O., Yorks.*

1909 Bryant, Gilbert E., 82, *Rivermead Court, Hurlingham,* S.W.

1930 ‡ Bucknill, The Rev. E. G., M.A., 234, *The Bluff, Yokohama, Japan.*

1907 Bulleid, Arthur, F.S.A., *Dimboro, Midsomer Norton, Somerset.*

1929 Burdett, E. F., 180, *High-street, Lowestoft, Suffolk.*

1896 †‡ Burr, Malcolm, D.Sc., F.G.S., A.R.S.M. (V.-Pres., 1912; Council, 1903–4, 1910–12), *United Univ. Club, Pall Mall East,* S.W. 1; *Trans. to:— Moscow, Petrovskaia Agricultural Academy, Prof. V. F. Boldyrev.*

1920 Burras, A. E., 3, *Connaught-road, North End, Portsmouth.*

1909 ‡ Burrows, The Rev. C. R. N., *The Vicarage, Mucking, Stanford-le-Hope, Essex.*

1932 Burtt, B. D., *Tsetse Research Dept., Old Shinyanga, Tanganyika Territory.*

1933 Burtt, E., B.Sc., D.I.C., *Wantage Hall, Reading, Berks.*

1922 ‡ Bushby, L. C., 11, *Park-grove, Bromley, Kent.*

1920 ‡ Bushell, Capt. H. S., *Ravensholt, Harrow-on-the-Hill.*

1922 Butler, A. E., *c/o Westminster Bank, Ltd., Clevedon, Somerset.*

1914 † Butterfield, R., Curator, *Corporation Museum, Keighley, Yorks.*

1912 †‡ Buxton, Prof. P. A., M.A. (Council, 1926–28), *Grit Howe, Gerrards Cross, Bucks.*

1933 Bytinski-Salz, Dr. H., *Deutsch-Italienisches Institut für Meeresbiologie, Rovigno d'Istria, Italy.*

1932 ‡ Cameron, E., B.Sc., *Farnham House Laboratory, Farnham Royal, Bucks.*

1902 ‡ Cameron, Malcolm, M.B., R.N. (Council, 1919–20), 15, *Teesdale-road, Leytonstone,* E. 11.

1923 ‡ Cameron, W. P. L., *Wellcome Tropical Research Laboratories, Khartoum, Sudan.*

1923 ‡ Campbell-Taylor, J. E., *Barclay's Bank House, Pembroke Dock, S. Wales.*

1910 ‡ Carlier, E. Wace, M.D., F.R.S.E., *Morningside, Granville-road, Dorridge, Warwickshire,* and *The University, Birmingham.*

1924 ‡ Carlier, S. E. Wace, *Morningside, Granville-road, Dorridge, Warwickshire.*

1910 †‡ Carpenter, Prof. G. D. Hale, D.M., M.B.E., Hope Professor of Zoology (Entomology) in the University of Oxford, *Penguelle, Hid's Copse-road, Cumnor Hill, Oxford.*

1895 ‡ Carpenter, George H., D.Sc., M.R.I.A. (Council, 1931–2), *The Manchester Museum, The University of Manchester.*

1915 Carr, Prof. J. W., M.A., F.L.S., F.G.S., Hon. F.R.H.S., Emeritus Professor of Biology in University College, *Mapperley Edge, Private-road, Sherwood, Nottingham.*

1912 Carter, H. F., *The Office of Medical Entomologist, Torrington-square, Colombo, Ceylon.*

1906 ‡ Carter, H. J., B.A., *Garrawillah, Kintore-street, Wahroonga, Sydney, N.S.W.*

1921 Castle, Miss Amy, *Dominion Museum, Wellington, New Zealand.*

1921 ‡ Cator, Douglas, 13, *Westminster-mansions, Gt. Smith-street,* S.W. 1.

1889†‡Cave, Charles J. P.

1920 ‡ le Cerf, F., Curator of Lepidoptera in the Paris Museum, *Museum National d'Histoire Naturelle, 45 bis rue de Buffon, Paris V.*

1914 ‡ Champion, H. G., M.A., *Forest Research Institute, Dehra Dun, U.P., India.*

1919 Chatterjee, N. C., B.Sc., *Forest Research Institute, Dehra Dun, U.P., India.*

1923 Chatterjee, S. N., *Forest Research Institute, Dehra Dun, U.P., India.*

1897 ‡ Chawner, Miss Ethel F., *The White House, Leckford, Stockbridge, Hants.*

1913 ‡ Cheavin, W. H. S., F.C.S., F.R.M.S., 19, *Rosendale-road, W. Dulwich,* S.E. 21.

1919 Cheesman, Miss L. Evelyn, 63, *Longridge-road, Earl's Court,* S.W. 5.

1920 ‡ Cheetham, C. A., *Austwick, via Lancaster.*

1933 Chorley, J. K., *Agricultural Laboratory, P.O. Box* 387, *Salisbury, S. Rhodesia.*

1933 ‡ Christophers, Col. Sir S. R., I.M.S., F.R.S., *London School of Hygiene and Tropical Medicine, Keppel-street,* W.C. 1.

1889 Christy, William M., M.A., F.L.S., *Watergate, Emsworth.*

1909 Clark, Lt.-Col. C. Turner, F.Z.S., *The Hutch, Shirley Warren, Southampton.*

1929 Clarkson, Miss Lucy I., *Apipucos, Recife (Pernambuco), Brazil.*

1914 ‡ Cleare, L. D., Jr., *Dept. of Agriculture, Georgetown, British Guiana.*

1922 Clutten, Wm. George, 136, *Coal Clough-lane, Burnley.*

1908 Clutterbuck, C. Granville, *Heathside,* 23, *Heathville-road, Gloucester.*

1904 ‡ Cockayne, E. A., M.A., M.D., F.R.C.P. (V.-Pres., 1927, Council, 1915–17, 1926–8), 116, *Westbourne-terrace,* W. 2.

1920 Cockcroft, T., 111, *Owen-street, Wellington South, New Zealand.*

1917 ‡ Cockerell, Prof. T. D. A., *University of Colorado, Boulder, Colorado, U.S.A.*

1914 Coleman, Leslie C., *Dept. of Agriculture, Bangalore, Mysore, India.*

1922 ‡ Collenette, C. L., F.R.G.S., 112, *The Terrace, Richmond, Surrey.*

1899 ‡ Collin, James E. (President, 1927–8; V.-Pres., 1913, 1923, 1929; Council, 1904–06, 1913–15, 1923–25, 1929), *Raylands, Newmarket.*

1924 ‡ Cooke, Brig.-Gen. B. H., C.M.G., C.B.E., D.S.O., *Inniscrone, Datchet, Bucks.*

1926 Cooper, Mrs. J. Omer, B.A., 23, *Leazes-terrace, Newcastle-on-Tyne.*

1921 Coote, F. D., 71, *Fenchurch-street,* E.C. 3.

1933 Corbet, A. S., B.Sc., Ph.D., F.I.C., *Iona, Cookham Rise, nr. Maidenhead, Berks.*

1924 Corbett, G. H., B.Sc., Government Entomologist, S.S., and F.M.S., *Kuala Lumpur, F.M.S.*

1921 ‡ Corporaal, J. B., *Zoological Museum, Plantage Middenlaan* 53, *Amsterdam, C.*

1924 ‡ Cott, Hugh B., M.A., F.R.P.S., F.Z.S., *The Elms, Elmlea-avenue, Stoke Bishop, Bristol.*
1932 Cottam, R., *Leestack, Birch-avenue, Wilmslow, Cheshire.*
1920 ‡ Cotterell, G. S., A.R.C.S., Box 23, *Dept. of Agriculture, Aburi, Gold Coast, B.W.A.*
1928 Covell, Major G., I.M.S., M.D., *Malaria Survey of India, Kasauli, Punjab, India.*
*1913 Coward, T. A., F.Z.S., 36, *George-street, Manchester.*
1931 Cowland, J. W., *Wellcome Tropical Research Laboratories, Khartoum, Sudan.*
1931 Cowley, John, M.A., 59, *Hills-road, Cambridge.*
1931 ‡ Cox, B. C., *The Fishery, Mapledurham, Oxon.*
1923 ‡ Cox, L. G., 9, *Chichester-terrace, Brighton.*
1933 ‡ Cox, W. E., 98, *Marlborough-road, Cardiff.*
1920 ‡ Crabbe, E., 52, *Sarsfield-road, Balham,* S.W. 12.
1895 Crabtree, B. H., *Holly Bank, Alderley Edge, Cheshire.*
1919 Crampton, Prof. G. Chester, *Massachusetts Agricultural College, Amherst, Mass., U.S.A.*
1922 ‡ Crawford, Wm. Monod, B.A., *Orissa, Marlborough-park, Belfast.*
1928 ‡ Crewdson, R. C. R., *The Grange, Delamere, Northwich, Cheshire.*
1919 ‡ Cumming, B. D., *Whistman's Wood, West Clandon, Surrey.*
1927 Cunliffe, N., M.A., D.Sc., *The School of Rural Economy, University of Oxford.*
1908 ‡ Curtis, W. P., *Richmond Chambers, Bournemouth.*
1933 Cuthbertson, *Agricultural Laboratory, P.O. Box* 387, *Salisbury, S. Rhodesia.*

1930 Daintree, A. C., *P.O. Box* 797, *Lourenço Marques, Portuguese East Africa.*
1929 ‡ Daltry, H. W., *Bar Hill, Madeley, nr. Crewe.*
1928 Dampf, Dr. A., Chief Government Entomologist, *Avenida Insurgentes,* 171, *Mexico, D.F., Mexico.*
1930 ‡ Davies, W. Maldwyn, Ph.D., B.Sc., *University College of N. Wales, Memorial Buildings, Bangor.*
1903 Day, F. H., 26, *Currock-terrace, Carlisle.*
1898 Day, G. O., *Sahlatston, Duncan's Station, Vancouver Island, British Columbia.*
1923 Dean, J. Davy, *Heathwaite, Heath Park-avenue, Cardiff.*
1930 Deshpande, V. G., M.Ag., *College of Agriculture, Poona, India.*
1923 Dewar, D. A., M.B., C.M., *Altyre House, Stanley S.O., Co. Durham.*
1930 ‡ Dibb, J. R., 45, *King George-avenue, Chapel Allerton, Leeds.*
1917 ‡ Dicksee, Arthur, 24, *Lyford-road, Wandsworth Common,* S.W. 18.
1929 ‡ Dinnage, H.,
1887 ‡ Dixey, Frederick Augustus, M.A., M.D., F.R.S., Hon. Fellow of Wadham College (Pres., 1909–10; V.-Pres., 1904–5, 1911; Council, 1895, 1904–6, 1911), *Wadham College, Oxford.*
1921 Dobson, H. W., 14, *Finkle-street, Kendal.*
1909 † Dobson, Thomas, 33, *The Park, Sharples, Bolton.*
1912 ‡ Doig, Major K. A. C., R.A.M.C., M.R.C.S., L.R.C.P., *Karundas Estate, P.O. Nyeri, Kenya Colony.*
1891 ‡ Donisthorpe, Horace St. John K., F.Z.S. (V.-Pres., 1911; Council, 1899–1901, 1910–12, 1931–33), 52, *Oakhill-road, East Putney,* S.W. 15.

1913 ‡ Dow, Walter James, *Penang, Guildford-road, Great Bookham.*
*1924 ‡ Druitt, Alan,
1921 du Porte, E. M., *Macdonald College, Quebec, Canada.*
1913 Duffield, C. A. W., *Pickersden, Brook Ashford, Kent.*
1906 ‡ Dukinfield Jones, E., *Box* 1831, *Mountain-street, Glendale, California, U.S.A.*

1910 ‡ Eales-White, Maj. J. C., F.Z.S., 88, *Mt. Ararat-road, Richmond, Surrey.*
1912 ‡ Earl, Herbert L., M.A., *Vanessa, Rawlyn-road, Torquay.*
1924 Eastham, Prof. L., M.Sc., *Dept. of Zoology, The University, Sheffield,* 10.
1902 ‡ Edelsten, H. M. (V.-Pres., 1928; Council, 1926–28), *Bramble Hill, Balcombe, Sussex.*
1927 ‡ Edmonds, T. H., *Strathmore, Totnes, Devon.*
1911 ‡ Edwards, F. W., M.A., Sc.D. (Council, 1929–31), 56, *Norton-road, Letchworth.*
1884 ‡ Edwards, Stanley, F.L.S., F.Z.S. (Council, 1912–14), *Lavenders, West Malling, Kent.*
1924 ‡ Edwards, W. H., *Dept. of Agriculture, Kingston, Jamaica.*
1916 ‡ Efflatoun Bey, Prof. H., 20–22, *Ruston Pacha-street, Helouan, Egypt.*
1900 ‡ Elliott, E. A., 41, *Chapel Park-road, St. Leonards-on-Sea.*
1924 Ellis, E. T., F.R.H.S., *Westwood, Ecclesall, Sheffield.*
1900 ‡ Ellis, H. Willoughby, F.Z.S. (V.-Pres., 1924, 1931; Council, 1916–18, 1922–4, 1929–31), *Woodlands, Old Hill, Chislehurst.*
1927 Elliston-Wright, F. R., M.D., *Braunton, N. Devon.*
1903 ‡ Eltringham, Harry, M.A., D.Sc., F.R.S., F.Z.S., V.-Pres. (President, 1931–2; Secretary, 1922–25; V.-Pres., 1914, 1918, 1926; Council, 1913–15, 1918–20, 1926–28, 1930, 1933), *Woodhouse, Stroud, Gloucestershire.*
1927 ‡ Embry, B., *St. Bartholomew's Vicarage, Dover.*
1927 Esaki, T., *College of Agriculture, Kyushu Imperial University, Fukuoka, Japan.*
1930 Evans, Miss Alwen M., D.Sc., 33, *Greenhill-avenue, Mossley Hill, Liverpool.*
1926 Evans, Col. G. H., C.I.E., C.B.E., *c/o National Bank of India, Ltd.,* 26, *Bishopsgate,* E.C. 2.
1928 ‡ Evans, J. W., *Waite Agricultural Research Institute, Glen Osmond, Adelaide, S. Australia.*
1919 ‡ Evans, Brigadier, W. H., C.S.I., C.I.E., D.S.O. (Council, 1933–), 18, *Stanhope-gardens,* S.W. 7.

1919 ‡ Falconer, William, 25, *Ashdale-road, Waterloo, Liverpool.*
1927 Falkner, H. J., *Gyfu, Barton, Torquay.*
1924 ‡ Farmiloe, H. J. C., *Purley Park, nr. Reading, Berks.*
1925 ‡ Fassnidge, W., 47, *Tennyson-road, Southampton.*
1933 Fennah, R. G., B.A., *Emmanuel College, Cambridge.*
1918 ‡ Fergusson, A., *Grangemount, Dunfermline, Fife.*
1922 Fernald, H. T., Ph.D., 707, *East Concord-avenue, Orlando, Florida, U.S.A.*
1933 Fidler, J. H., B.A., *Warren Side, Mapledurham, nr. Reading.*
1933 ‡ FitzGerald, D. Vesey, *Clammer Hill, Haslemere, Surrey.*
1930 Fletcher, P. Bainbrigge, 65, *Compton-road, Wimbledon,* S.W.

1898 ‡ Fletcher, Fleet Paymaster Thomas Bainbrigge, R.N., F.L.S., F.Z.S., *Rodborough Fort, Stroud, Glos.*
1883 † Fletcher, William Holland B., M.A., *Aldwick Manor, Bognor.*
1905 Floersheim, Cecil, 16, *Kensington Court Mansions*, S.W. 8.
1922 Flower, Miss A. B., *Langtrees, Landford, nr. Salisbury.*
1928 ‡ Forbes, Comm. Wyndham, D.S.O., R.N., *Naval and Military Club*, 94, *Piccadilly*, W.1.
1924 ‡ Ford, E. B., M.A., B.Sc., *Dept. of Zoology and Comparative Anatomy, University Museum, Oxford.*
1932 ‡ Ford, W. K., 70, *Cromwell-avenue, London*, N. 6.
1913 Foster, Arthur H., M.R.C.S., L.R.C.P.(Eng.), M.B.O.U., 13, *Tilehouse-street, Hitchin, Herts.*
1898 ‡ Fountaine, Miss Margaret E.,
1920 ‡ Fox-Wilson, G., *Entomological Dept., R.H.S. Laboratory, Wisley, Ripley, Surrey.*
1928 Francis, H. O., 1, *Gatcombe-road, Tufnell Park*, N. 19.
1908 Fraser, F. C., Lt.-Col., M.D., I.M.S., *c/o Bombay Natural History Society*, 6, *Apollo-street, Bombay, India.*
1888 ‡ Fremlin, H. Stuart, M.R.C.S., L.R.C.P., *Heavers, Ryarsh, nr. West Malling, Kent.*
1910 ‡ Frisby, G. E., 29, *Darnley-road, Gravesend.*
1907 ‡ Fryer, J. C. F., O.B.E., M.A. (V.-Pres., 1927, Council, 1916–18, 1925–27), *Milton-road, Harpenden, Herts.*

1930 ‡ Gabriel, A. G., *Wilfadene, King's End, Ruislip, Middx.*
1887 ‡ Gahan, Charles Joseph, M.A., D.Sc. (Pres., 1917–18; V.-Pres., 1916, 1919; Sec., 1899–1900; Council, 1893–95, 1901, 1914–16, 1919), *The Mount, Aylsham, Norfolk.*
1920 Gardner, J. C. M., *Forest Research Institute, Dehra Dun, U.P., India.*
1901 †‡ Gardner, Willoughby, D.Sc., F.L.S., F.S.A., *Y Berlfa, Deganwy, N. Wales.*
1923 Garrett, F. C., O.B.E., D.Sc., *South View House, Alnmouth, Northumberland.*
1931 ‡ Garthside, Stanley, *Farnham House Laboratory, Farnham Royal, Bucks.*
1922 ‡ Gater, B. A. R., M.A., D.I.C., F.R.M.S., Professor of Biology, *King Edward VII College of Medicine, Singapore, Straits Settlements.*
1920 Gauntlett, Dr. H. Leon, A.K.C., F.Z.S., 37, *Howard's-lane, Putney*, S.W. 15.
1919 ‡ Gedye, A. F. J., *P.O. Box* 216, *Nairobi, Kenya Colony.*
1923 Gee, G. F., *Abbotsford, Cuddington, nr. Northwich, Cheshire.*
1922 ‡ Ghosh, C. C., B.A., *Agricultural College, Mandalay, Burma, India.*
1930 Gibbins, E. G., *Box* 41, *Kampala, Uganda.*
1915 ‡ Gibson, Arthur, *Dominion Entomologist, Dept. of Agriculture, Ottawa, Canada.*
1925 ‡ Gilles, W. S., F.I.C., F.C.S., *The Cottage, Bocking, Braintree, Essex.*
1933 ‡ Gillett, J. D., 1, *Beulah-road, Walthamstow, Essex.*
1904 ‡ Gilliat, Francis T., B.A., 25, *Manor-road, Folkestone.*
1919 ‡ Gimingham, C. T., O.B.E., F.I.C., *Ministry of Agriculture, Pathological Laboratory, Milton-road, Harpenden, Herts.*
1930 ‡ Glegg, D. Lindsay, *Birchstone, Coombe Park, Kingston, Surrey.*
1933 Glennie, Maj. E. A., *Geodetic Branch, Survey of India, Dehra Dun, U.P., India.*

*1914 ‡ **Godfrey**, E. J., 1902, *Hick's-lane, Bangkok, Siam.*
1924 **Golding**, F. D., *Moor Plantation, Ibadan, S. Provinces, Nigeria.*
1920 ‡ **Goodban**, B. S., *Watersmeet, West-street, Ewell, Epsom, Surrey.*
1927 ‡ **Goodman**, A. de B., *The Old Malt House, Shenley Church End, nr. Bletchley, Bucks.*
1904 **Goodwin**, Edward, *Canon Court, Wateringbury, Kent.*
1925 ‡ **Gordon**, D. J., B.A., *The Manor House, Strathpeffer, N.B.*
1933 ‡ **Goseling**, A. R. A., *Lincoln Hill, Ross-on-Wye, Herefordshire.*
1929 **Graham-Smith**, G. S., M.D., F.R.S., *Dept. of Pathology, Tennis Court-road, Cambridge.*
1927 **Grandi**, Prof. Dr. Guido, *R. Instituto Superiore Agrario, Bologna, Italy.*
1924 **Grant**, J. H., *Cole Dale View, Coleshill-road, Ward End, Birmingham.*
1931 ‡ **Grant**, Mrs. K. J., *Lithend, Luton-road, Wheathampstead, Herts.*
1911 ‡ **Graves**, P. P., 5, *Hereford-square*, S.W. 7.
1891†‡**Green**, E. Ernest, F.Z.S. (Pres., 1923–24; V.-Pres., 1915, 1925; Council, 1914–16, 1925), *Way's End, Beech-avenue, Camberley.*
1933 **Green**, R. T., M.D., B.Sc., D.T.M., *The Institute for Medical Research, Kuala Lumpur, F.M.S.*
1932 ‡ **Green**, T. L., B.Sc., *Dept. of Zoology, The University, Bristol.*
1893 † **Greenwood**, H. P., F.L.S., *Whitsbury House, Salisbury.*
1933 **Greenwood**, J. A. C., 33, *South Ridgway-place, Wimbledon*, S.W. 19.
1921 **Greenwood**, W. F. N., *C.S.R. Co., Lautoka, Fiji.*
1931 ‡ **Gregson**, Col. G. K., D.S.O., *Cob Orchard, Plaxtol, Kent.*
1928 ‡ **Grensted**, The Rev. Prof. L. W., M.A., D.D., *Oriel College, Oxford.*
1894 ‡ **Grimshaw**, Percy H., I.S.O., *Royal Scottish Museum, Edinburgh.*
1905 **Grist**, Charles J., *The Croft, Carol Green, Berkswell, Coventry.*
1920 ‡ **Grosvenor**, T. H. L., *Springvale, Linkfield-lane, Redhill, Surrey.*
1927 **Gunder**, J. D., 310, *Linda Vista-avenue, Pasadena, California, U.S.A.*
1920 ‡ **Gunton**, Major H. C., *Rathgar, Milton-avenue, Gerrards Cross, Bucks.*
1906 **Gurney**, Gerard H., *Keswick Hall, Norwich.*
1910 **Gurney**, William B., Government Entomologist, *Department of Agriculture, Sydney, Australia.*

1912 **Hacker**, Henry, *Queensland Museum, Brisbane, Queensland.*
1919 **Hadwen**, Dr. Seymour, D.Vet.Sci., 579, *Huron-street, Toronto, Canada.*
1925 ‡ **Haig-Thomas**, P., *The Grange, Goring-on-Thames.*
1906 ‡ **Hall**, Arthur, 29*a*, *Dingwall-road, Croydon, Surrey.*
1885 ‡ **Hall**, T. W., *Wood Grange, Shire-lane, Chorley Wood, Herts.*
1921 ‡ **Hall**, W. J., D.Sc., Director of the B.S.A. Co.'s Citrus Experimental Station, *Mazoe, S. Rhodesia.*
1912 ‡ **Hallett**, H. M., 64, *Westbourne-road, Penarth, Glamorganshire.*
1923 ‡ **Halliwell**, A. C., F.R.C.S., 1, *Cæsarea-place, Jersey, C.I.*
1929 **Hamlin**, W. E., 3, *St. Mark's-place, Wimbledon*, S.W. 19.
1915 ‡ **Hamm**, Albert Harry, A.L.S., 22, *Southfield-road, Oxford.*
1928 ‡ **Hammond**, C. O., 34, *Passmore-gardens, New Southgate*, N. 11.
1891 ‡ **Hanbury**, Frederick J., F.L.S., *Brockhurst, E. Grinstead.*
1923 ‡ **Hancock**, G. L. R., *Dept. of Agriculture, Box 5, Kampala, Uganda ; Trans. to :—c/o Archdeacon Hancock, The Rectory, Whatley, Frome, Somerset.*

1923 Handley, G., 54, *All Saints'-road, Kings Heath, Birmingham.*

1932 ‡ Hanna, A. D., *Entomological Research Station, Ministry of Agriculture, Giza, Egypt.*

1929 ‡ Hanson, H. S., *Farnham House Laboratory, Farnham Royal, Bucks.*

1930 Hardwicke, S. M. B., *Friarmayne, nr. Dorchester.*

1903 ‡ Hare, E. J., 4, *New-square, Lincoln's Inn,* W.C. 2.

1920 ‡ Hargreaves, E., *Lands and Forest Dept., Freetown, Sierra Leone.*

1920 Hargreaves, H., *Govt. Entomologist, Dept. of Agriculture, Kampala, Uganda.*

1926 Harmsworth, Sir H. A. B., *c/o Midland Bank, Hove, Sussex.*

1926 Harris, R. H. T. P., Director, *Tsetse Fly Control Operations, P.O. Box* 41, *Empangeni, Zululand, S. Africa.*

1928 Harris, W. V., Asst. Entomologist, *Dept. of Agriculture, Morogoro, Tanganyika Territory.*

1925 Harukawa, C., *Ohara Institute, Kurashiki, Okayama-Ken, Japan.*

1910 ‡ Harwood, Philip, *c/o Westminster Bank, Ltd.,* 92, *Wimborne-road, Winton, Bournemouth.*

1919 ‡ Hawker-Smith, W., *Malt House Farm, Hambledon, Godalming, Surrey.*

1927 ‡ Hawkins, C. N., 23, *Wilton-crescent, Wimbledon,* S.W. 19.

1913†‡Hawkshaw, Oliver, *Holly Combe, Liphook, Hants.*

1924 Hayward, A. R., *Misterton, Somerset.*

1919 ‡ Hayward, H. C., M.A., *Repton, Derby.*

1921 ‡ Hayward, Capt. K. J., F.R.G.S., *c/o Breyer Hmnos., Florida* 414, *Buenos Aires, Argentine.*

1929 Hebbert, G. K. P., *Lee Copse, Berrynarbor, N. Devon.*

1910 ‡ Hedges, Alfred V., *Milton Ernest House, Milton Ernest, Beds.*

1919 ‡ Hemming, Francis, C.B.E., Treasurer (1929– ; Council, 1928), 18, *Glebe-place, Chelsea,* S.W. 3.

1933 Hemming, Rev. E. F., B.A., *The Vicarage, Manningtree, Essex.*

1910 Henderson, J., *Ashford House, Talybont-on-Usk, Breconshire.*

1918 Herrod-Hempsall, J., *Sternthorpe, Stockingstone-road, Old Bedford-road, Luton, Beds.*

1903 Herrod-Hempsall, W., *W.B.C., Apiary, Old Bedford-road, Luton, Beds.*

1929 ‡ Heslop, Ian R. P., B.A., 34, *Henleaze-gardens, Westbury-on-Trym, Bristol.*

1925 Hesse, Dr. A. J., *South African Museum, Cape Town, S. Africa.*

1913 Hewitt, John, B.A., Director, *Albany Museum, Grahamstown, S. Africa.*

1923 ‡ Hicks, J. B., 30, *Stanhope-gardens,* S.W. 7.

1922 ‡ Higgins, L. G., M.A., F.R.C.S., *Linkwood, Woking, Surrey.*

1930 ‡ Hincks, W. D., M.P.S., 46, *Gipton Wood-avenue, Harehills, Leeds* 8.

1924 ‡ Hingston, Major R. W. G., M.C. (Council, 1931–33), 95, *Argyle-road, Ealing,* W. 13.

1929 ‡ Hobby, B. M., M.A., 21, *Methuen-street, Southampton.*

1912 Hodge, Harold, 99, *Highbury-place,* N. 5.

1922 Hogarth, A. Moore, 143, *Golders Green-road,* N.W. 11.

1910 Holford, H. O., *Elstead Lodge, Godalming, Surrey.*

1898 ‡ Holman-Hunt, C. B., *The Laurels, Walditch, nr. Bridport, Dorset.*

1922 ‡ Hopkins, G. H. E., *Box* 41, *Kampala, Uganda.*

1919 de Horrack-Fournier, Mme. A., 90, *Boulevard Malesherbes, Paris,* and *Château de Voisins, Louveciennes, Seine-et-Oise, France.*

1927 ‡ Hucklesby, F. G., *c/o Mrs. Allman, Oak Tree Cottage, Forest Green, Ockley, Surrey.*
1888 Hudson, G. V., *Hill View, Karori, Wellington, New Zealand.*
1907 Hughes, C. N., 78, *Harley House*, N.W. 1.
1921 Hunt, The Rev. J. Wesley, *Wesleyan Methodist Church of S. Africa, Private Bag, P.O. Imvani, C.P., S. Africa.*
1917 Hunter, David, M.A., M.B., *The Coppice, Nottingham.*
1922 ‡ Hutchinson, G. E., M.A., F.L.S., *Osborn Zoological Laboratory, Yale University, New Haven, Conn., U.S.A.*

1912†‡Imms, A. D., M.A., Sc.D., F.R.S., (V.-Pres., 1920, 1930; Council, 1919–21, 1930–2), *Zoological Laboratory, The Museums, Cambridge.*
1920 Inglis, C. M., F.Z.S., M.B.O.U., *The Museum House, Darjeeling, Bengal, India.*
1932 Irving, G. D., 7, *Maplesbury-road*, N.W. 2.
1931 Issiki, Prof. Syûti T., *School of Agriculture, Taihoku University, Formosa, Japan.*

1927 ‡ Jackson, C. H. N., M.Sc., Ph.D., *Cayton, York-road, St. Albans.*
1917 ‡ Jackson, Miss Dorothy J., *North Cliff, St. Andrews, Fife.*
1932 Jackson, T. H. E., *Kahretwa, Kitale, Kenya Colony.*
1927 Jacobi, Prof. A., *Museum für Tierkunde und Volkerkunde, Dresden, Germany.*
1930 James, H. C., Ph.D., *Zoological Laboratory, Cambridge.*
1920 James, Russell, *Dial House, Ongar Park, Essex.*
1914 ‡ Janse, Prof. A. J. T., D.Sc., 1*st-street, Gezina, Pretoria, S. Africa.*
1898 ‡ Janson, Oliver J., 13, *Fairfax-road, Hornsey*, N. 8.
1933 Janson, R. B., 44, *Great Russell-street*, W.C. 1.
1927 Janson, W. H., 44, *Gt. Russell-street, Bloomsbury*, W.C. 1.
1932 Jeannel, Dr. R., *Muséum National d'Histoire naturelle, rue de Buffon, Paris, V.*
1928 ‡ Jeddere-Fisher, Major H. C., *Woodlands Corner, Littlehampton, Sussex.*
1933 ‡ Jobling, B., *Wellcome Entomological Field Laboratories, Claremont, Esher, Surrey.*
1924 ‡ Johnston, H. B., M.A., 5, *Scroope Terrace, Cambridge*, late *Wellcome Laboratory, Khartoum, Sudan.*
1927 Johnstone, J. F., *Courtlands, Clarence-parade, Southsea.*
1933 Johnstone, R. F., *Royal Scots Detachment,* 1*st K.A.R., Songea, Tanganyika Territory.*
1930 ‡ Jones, E. Parry, B.Sc., Ph.D., *The British S. Africa Co., Citrus Experimental Station, P.O. Mazoe, S. Rhodesia.*
1924 ‡ Jones, F. Morton, D.Sc., 2000, *Riverview-avenue, Wilmington, Delaware, U.S.A.*
1929 Jones, H. P., *Natural History Museum, Wollaton Hall, Nottingham.*
1925 ‡ Jones, J. R. J. Ll., M.A., *Arranmore, Mill Bay, Cobble Hill, British Columbia.*
1894†‡Jordan, K., Ph.D., F.R.S., V.-Pres. (President, 1929–30; V.-Pres., 1909, 1926, 1931; Council, 1909–11, 1924–6, 1931, 1933–), *The Museum, Tring.*

1910 ‡ Joseph, E. G., M.C., M.A., B.Sc., 23, *Clanricarde-gardens*, W. 2.
1910 ‡ Joy, E. Cooper, 11, *The Leas, Folkestone.*
1902 ‡ Joy, Norman H., M.R.C.S., L.R.C.P., 271, *Kilburn Lane*, W. 10.

1928 Karandikar, K. R., B.A., M.Sc., Ph.D., *Locust Research Laboratory, Pasni, Baluchistan.*
1896 †‡ Kaye, W. J. (Council, 1906–8), *Caracas, Ditton Hill, Surbiton.*
1925 Kearns, H. G. H., B.Sc., Ph.D., *The Research Station, Long Ashton, nr. Bristol.*
1926 Kelly, R., 59, *Swanston-street, Melbourne, Victoria, Australia.*
1926 Kennedy, Prof. C. H., *Ohio State University, Columbus, Ohio, U.S.A.*
1890 ‡ Kenrick, Sir George H., *Whetstone, Somerset-road, Edgbaston, Birmingham.*
1929 Kenway, H. C., 179, *Brook-street, Brooklyn, Pretoria, S. Africa.*
1931 Kerr, Prof. J. Graham, *The University, Glasgow.*
1904 Kershaw, G. Bertram de B., *Huntsman's Lodge, Wrotham Heath, Kent.*
1900 Keys, James H., 7, *Whimple-street, Plymouth.*
1925 Killington, F. J., A.C.P., 22 *Litchfield-road, Midanbury, Bitterne-park, Southampton.*
1912 ‡ King, H. H., *The Parsonage, Ospringe, Faversham, Kent.*
*1889 ‡ King, J. J. F.-X.
1917 ‡ Kirkpatrick, T. W., *E. African Agric. Res. Station, Amani, via Tanga, Tanganyika.*
1887 † Klein, Sydney T., F.L.S., F.R.A.S., *Lilly's, Chelsfield, Kent.*

1927 ‡ Labouchere, Col. F. A., 15, *Draycott-avenue, Chelsea*, S.W.
1922 ‡ Lacey, Lionel, 485, *Pelham-road, New Rochelle, N.Y., U.S.A.*
1929 Ladell, W. R. S., *Dept. of Agriculture, Bangkok, Siam.*
1925 Laidlaw, F. F., M.R.C.S., L.R.C.P., *Eastfield, Uffculme, Devon.*
1931 Laidlaw, W. B. R., D.Sc., 25, *Westburn-drive, Aberdeen.*
1916 ‡ Laing, Frederick (Council, 1922–24), *British Museum (Natural History), Cromwell-road*, S.W. 7.
1910 ‡ Lakin, C. Ernest, M.D., F.R.C.S., 58, *Portland-place*, W. 1.
1924 Lamb, C. G., M.A., Sc.D., 65, *Glisson-road, Cambridge.*
1911 †‡ Lamborn, W. A., O.B.E., M.R.C.S., L.R.C.P., *c/o W. S. Tomkinson, Esq., North Hinksey, Oxon.*
1917 Langham, Sir Charles, Bart., *Tempo Manor, Co. Fermanagh.*
1920 ‡ Lathy, Percy I., 90, *Boulevard Malesherbes, Paris.*
1925 Latter, M. P., F.G.S., *Box* 1169, *The Corner House, Johannesburg, S. Africa.*
1895 Latter, Oswald H., M.A., *The Elms, Charterhouse-road, Godalming.*
1927 ‡ Lawson, H. B., *The Links, Worplesdon, nr. Woking, Surrey.*
1930 Lawson, J. A., *Greenacre, Forest Row, Sussex.*
1923 ‡ Lean, O. B., *Monks Path, Warwicks Bench, Guildford, Surrey.*
1930 ‡ Leeson, H. S., 102, *Mansell-road, Greenford, Middx.*
1927 Leivers, A. R., 20, *Warwick-road, Mapperley-park, Nottingham.*
1920 ‡ Leman, G. C., *Wynyard*, 152, *West Hill, Putney Heath*, S.W. 15.
1924 ‡ Le Pelley, R. H., Ph.D., *c/o Director of Agriculture, Nairobi, Kenya.*
1930 ‡ Lever, R. J. A. W., *Tulagi, British Solomon Islands, via Australia.*

1903†‡Levett, The Rev. Thomas Prinsep, *Frenchgate, Richmond, Yorks.*
1925 Levick, J., *Ashley House, Handsworth Wood, Birmingham.*
1931 ‡ Lewis, D. J., *Shenfield Rectory, Brentwood, Essex.*
1908 † Lewis, John Spedan, F.Z.S., 54, *Orchard-court, Portman-square,* S.W.1.
1930 Lisney, A. A., M.A., M.B., D.Ph., *Cremorne, Shankill, Co. Dublin, Irish Free State.*
1919 ‡ Lloyd, Llewellyn, D.Sc., *Zoological Dept., University, Leeds.*
1933 ‡ Lloyd, O. C., *Great Dixter, Northiam, Sussex.*
1885†‡Lloyd, R. W., V.-Pres. (V.-Pres., 1924, 1928, 1932; Council, 1900–1, 1923–5, 1928–30, 1932–), 1, 5 *and* 6, *Albany, Piccadilly,* W. 1.
1920 ‡ Lodge, George, *Hawkhouse, Upper Park-road, Camberley.*
1903 ‡ Lofthouse, T. A., *The Croft, Linthorpe, Middlesbrough.*
1925 ‡ Longfield, Miss C. (Council, 1932–), 20, *Pont-street,* S.W. 1.
1908 ‡ Longsdon, D., *The Flower House, Southend, Catford,* S.E. 6.
1923 Lowther, R. C., M.B., Ch.B., *Fernleigh, Grange-over-Sands, Lancs.*
1903 Lyell, G., *Gisborne, Victoria, Australia.*

1910 ‡ MacDougall, R. Stewart, M.A., LL.D., D.Sc., F.R.S.E. (V.-Pres., 1929; Council, 1928–30), *Ivy Lodge, Gullane, East Lothian.*
1930 McHardy, J. W., B.Sc., 53, *Liberton-drive, Edinburgh.*
1928 ‡ McKenny-Hughes, A. W., D.I.C., 54, *Palace Gardens-terrace, Campden Hill,* W. 8.
1929 ‡ MacLagan, D. Stewart, D.Sc., *Dept. of Agricultural Zoology, George-square, Edinburgh.*
1919 McLeod, M. C., *Falcon Close, Woolton Hill, nr. Newbury.*
1930 Madwar, S., M.B., Ch.B., D.T.M. & H., *Molteno Institute, Cambridge.*
1899†‡Main, Hugh, B.Sc., F.Z.S. (Council, 1908–10), 55, *Buckingham-road, South Woodford,* E. 18.
1930 ‡ Mansbridge, G. H., *Gonville, Mina-avenue, Langley-road, Slough.*
1892 ‡ Mansbridge, W., *Monrieth, Derby-road, Formby, Liverpool.*
1919 Mansfield-Aders, Dr. W.,
1932 Manson, D., M.B., Ch.B., L.D.S., *Cinnamara Tea Estate, Cinnamara P.O., Upper Assam, India.*
1895 ‡ Marshall, Sir Guy A. K., C.M.G., D.Sc., F.R.S., F.Z.S. (V.-Pres., 1919, 1924, 1932; Council, 1907–8, 1919–21, 1924–6, 1928–30, 1932–), 16, *Cranley-place,* S.W. 7.
1922 Marshall, J. F., M.A., F.Z.S., *Seacourt, Hayling Island, Hants.*
1896 Marshall, P., M.A., B.Sc., F.G.S., *Hautere, Bellevue-road, Lower Hutt, New Zealand.*
1897 Martineau, Alfred H., *Shutteroaks Toll House, Crewkerne, Somerset.*
1919 Marumo, N., *Zoological Institute, Agricultural College, Imperial University, Komaba, Tokyo, Japan.*
1922 ‡ Massee, A. M., *East Malling Research Station, East Malling, Kent.*
1895 Massey, Herbert, *Ivy-Lea, Burnage, Didsbury, Manchester.*
1921 Matsumura, Prof. S., *Hokkaido Imperial University, Sapporo, Japan.*
1912 Maulik, Prof. S., M.A., *c/o R. Maulik, Clock Tower, Hogg Market, Calcutta, India.*
1916 ‡ May, Harry Haden, *Black Friars Distillery, Southside-street, Plymouth.*

1929 ‡ de Meillon, Botha, *South African Institute for Medical Research, Box* 1038, *Johannesburg, S. Africa.*
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1919 ‡ Mellows, Charles, M.A., *The College, Bishop's Stortford.*
1912 ‡ Metcalfe, The Rev. J. W., *The Vicarage, Stoke Canon, Exeter.*
1880 ‡ Meyrick, Edward, B.A., F.R.S., F.Z.S., *Thornhanger, Marlborough.*
1926 ‡ Michelmore, A. P. G., *Saffron Close, Chudleigh, S. Devon.*
1920 ‡ Miller, D., Ph.D., Chief of Dept. of Entomology, *The Cawthron Institute, Nelson, New Zealand.*
1921 Miller, N. C. E., *Dept. of Agriculture, Kuala Lumpur, F.M.S.*
1930 Misra, Dr. A. B., *Hindu University, Benares, India.*
1923 Mitchell-Hedges, F. A., *The Deene, Lamorna, nr. Penzance, Cornwall.*
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1933 Moonsawmy, H. A., M.R.S.I., County Sanitary Inspector, *c/o Government Health Department, Georgetown, Demerara, British Guiana.*
1922 ‡ Moore, A., M.D., *Sundew, Lyndhurst, Hants.*
1899 ‡ Moore, Harry, 12, *Lower-road, Rotherhithe,* S.E. 16.
1927 Moore, H. W. B., *Plan Albion, Berbice, British Guiana.*
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1895†‡Morley, Claude, F.Z.S., *Monk Soham House, Suffolk.*
1920 ‡ Morris, H. M., M.Sc., *Agricultural Dept., Nicosia, Cyprus.*
1893 Morton, Kenneth J., 13, *Blackford-road, Edinburgh.*
1910 ‡ Mosely, Martin E., 43, *Lansdowne-crescent,* W. 11.
1911 ‡ Moss, The Rev. A. Miles, *c/o Messrs. Booth & Co., Para, Brazil.*
1933 ‡ Moss, J. E., *Farnham House Laboratory, Farnham Royal, Bucks.*
1911 Mounsey, J. Jackson, *Bryn-Tirion, Kingstone, Hereford.*
1931 Moutia, L. A., *Dept. of Agriculture, Reduit, Mauritius.*
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1925 Mumford, E. P., *Director, Pacific Entomological Survey, Hawaiian Sugar Planters' Association, Experiment Station, Honolulu, T.H.*
1920 Munro, H. K., B.Sc., *P.O. Box* 513, *Pretoria, South Africa.*
1918 Munro, Prof. J. W., D.Sc. (Council, 1927-9), *Imperial College of Science, S. Kensington,* S.W. 7.
1914 ‡ Murray, G. H., *Director of Agriculture, Rabaul, New Britain, Territory of New Guinea, via Australia.*
1922 Musgrave, A., *Australian Museum, Sydney, N.S.W.*
1920 ‡ Myers, J. G., D.Sc., *Mount St. Benedict, Tuna-Tuna, Trinidad, West Indies.*

1926 ‡ Nash, T. A. M., D.Sc., Ph.D., A.R.C.S., *Medical Entomologist, Tsetse Investigation Gadau, via Joss, N. Nigeria.*

1903 ‡ Neave, S. A., O.B.E., M.A., D.Sc., F.Z.S., Secretary, 1919– (V.-Pres., 1918, 1931; Council, 1916–18), 41, *Queen's-gate*, S.W. 7, and *Bishop's House, Beaconsfield, Bucks.*
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1931 Newbold, W., O.B.E., M.A., *Imberley Lodge, East Grinstead, Sussex.*
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1907 ‡ Newman, Leonard Woods, *Bexley, Kent.*
1913 Newman, L. J. W., 5, *Bernard-street, Claremont, W. Australia.*
1909 Newstead, Alfred, *The Grosvenor Museum, Chester.*
1921 Nicholson, A. J., *University of Sydney, New South Wales, Australia.*
1909 ‡ Nicholson, G. W., M.A., M.D. (Council, 1913–15), *Oxford and Cambridge Club, Pall Mall*, S.W. 1.
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1910 ‡ Oldaker, Francis A., M.A., *The Red House, Haslemere.*
1931 Oliver, W. R. B., *Dominion Museum, Wellington, N.Z.*
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1913 ‡ Ormiston, Walter, *New Oriental Hotel, Galle, Ceylon.*

1932 Pagden, H. T., M.A., *Government Entomologist, Tulagi, British Solomon Islands Protectorate.*
1895 ‡ Page, Herbert E. (Council, 1918–20), 9, *Vanbrugh Hill, Blackheath*, S.E. 3.
1928 Paine, R. W., Assistant Entomologist, *Dept. of Agriculture, Suva, Fiji.*
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1922 ‡ Pearce, Miss E. K., *East Morden, Wareham, Dorset.*
1927 ‡ Pearman, J. V., 1, *Pembroke-mansions, Oakfield-road, Clifton, Bristol.*
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1914 ‡ Pendlebury, Major Wm. J. de Monté, M.A., *Broadlands, Shrewsbury.*
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1920 ‡ PRIOR, W. H. J., *Culham Apiary, Main-road, New Eltham,* S.E. 9.

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1893 ‡ PROUT, L. B. (COUNCIL, 1905–7), 84, *Albert-road, Dalston,* E. 8.

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1926 PURI, Dr. I. M., *Central Research Institute, Kasauli, Punjab, India.*

1922 ‡ RAE, Mrs. Margaret, *Courthill, Birkenhead.*

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1933 ‡ RAICHOUDHURY, D. P., M.Sc., Ph.D., D.I.C., *Dept. of Entomology, Imperial College of Science and Technology, S. Kensington,* S.W. 7.

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1928 REED, F. J., 30 and 32, *Eastover, Bridgwater, Somerset.*

1898 REUTER, Professor Enzio, *Helsingfors, Finland.*

1910 ‡ DE RHÉ-PHILIPE, G. W. V., *Birkheads, Reigate, Surrey.*

1933 RIAZUDDIN, M., B.Sc., *c/o Khan Bahadur, Abdul Aziz, Rajahmundry, Madras Presidency, India.*

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1932 Rosevear, D. R., *The Botanic Gardens, Victoria, British Cameroons.*

1888†‡Rothschild, The Right Hon. Lord, D.Sc., F.R.S., F.L.S., F.Z.S. (President, 1921–2; V.-Pres., 1920, 1923; Council, 1900, 1919), *Zoological Museum, Tring.*

1930 Rothschild, Miss Miriam, 4, *Palace-green,* W. 8.

1890 ‡ Routledge, G. B., *Tarn Lodge, Heads Nook, Carlisle.*

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1928 ‡ Salt, G., Ph.D., D.Sc., *The Zoological Laboratory, Cambridge.*

1926 ‡ Samman, Miss M., *The Croft, North Ferriby, E. Yorks.*

1933 ‡ Sandeman, R. G. C. C., *Dan-y-Parc, Crickhowell, Breconshire.*

1910 ‡ Saunders, H. A., 8, *Honywood-road, Colchester.*

1923 ‡ Saunders, L. G., M.Sc., Ph.D., *Dept. of Zoology, University of Saskatchewan, Saskatoon, Canada.*

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1930 ‡ Scott, Maj. F. B., I.A., *c/o Lloyds (Cox's & King's Branch), Pall Mall,* S.W. 1.

1909 ‡ Scott, Hugh, M.A., Sc.D., F.L.S. (V.-Pres., 1926; Council, 1925–7), *British Museum (Natural History), Cromwell-road,* S.W. 7.

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1931 ‡ Seth-Smith, D. W., M.R.C.S., *Zoological Gardens, Regents Park,* N.W. 8.

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1924 ‡ Sharp, E. P., 1, *Bedfordwell, Eastbourne.*

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1931 Shaw, J. R., *Oakhurst, Waste-lane, Knowle, Warwickshire.*

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1904 ‡ Simmonds, Hubert W., *Dept. of Agriculture, Suva, Fiji.*

1921 ‡ Simms, H. M., B.Sc., *The Farlands, Stourbridge.*

1933 Simon, P. H., 4, *Stanmore Hall, Stanmore, Middx.*

1929 Simpson, Rev. Robert, M.Sc. *Cranleigh School, Surrey.*

1924 Simpson-Hayward, G. H., *Icomb Place, Stow-on-the-Wold, Gloucestershire.*

1928 Sinton, Lieut.-Col. J. A., V.C., O.B.E., I.M.S., M.D., Director, Malaria Survey of India, *Kasauli, India.*

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1930 Smart, John, B.Sc., *Bellfield, Eskbank, Midlothian, N.B.*

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1915 ‡ Smith, A. C., *Horton, Mornington-road, Woodford Green.*

1901 Smith, Arthur, *County Museum, Lincoln.*

1911 ‡ Smith, B. H., B.A., *Casa, Frensham Vale, Lower-Bourne, Farnham.*

1929 ‡ Smith, C. Bramwell, 61, *Onslow-gardens, Muswell Hill,* N.10.

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1919 Smith, S. Gordon, F.L.S., *Estyn, Boughton, Cheshire.*

1918 † Smith, W. P., F.Z.S., *Moorlands Broad-road, Sale, nr. Manchester.*

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1930 ‡ Squire, F. A., B.Sc., *Dept. of Science and Agriculture, Georgetown, Demerara, British Guiana.*

1930 Staley, John, *British Mosquito Control Institute, Hayling Island, Hants.*

1928 ‡ Steer, W., *East Malling Research Station, East Malling, Kent.*

1910 ‡ Stenton, R., 22, *Milton-road, Harpenden, Herts.*
1923 Stewart, A. M., 8, *Ferguslie, Paisley, N.B.*
1922 Stewart, B., *Lovell House, Leeds, Yorks.*
1920 ‡ Stidston, Engr.-Commander S. T., R.N., *Ashe, Ashburton, S. Devon.*
1918 ‡ Stiff, Rev. Alfred T., *All Souls' Vicarage, Brighton.*
1910 ‡ Stoneham, Lt.-Col. Hugh F., O.B.E., F.Z.S., M.B.O.U., *The Stoneham Museum, Kitale, Kenya Colony.*
1915 ‡ Stott, C. E., *Armitage, nr. Stafford.*
1927 Strand, Prof. Dr. Embrik, M.A.N., F.L.S., F.Z.S., etc., *Director, Systematic Zoological Institute and Hydrobiological Station, Latvian University, Riga, Latvia.*
1925 Swierstra, C. J., *Director, Transvaal Museum, Pretoria.*
1876 ‡ Swinton, A. H., *Oak Villa, Braishfield, Romsey, Hants.*
1911 ‡ Swynnerton, C. F. M., *Shinyanga, Tanganyika Territory.*
1920 ‡ Syms, Edgar E., 22, *Woodlands-avenue, Wanstead*, E. 11.

1910 Tait, Robt., junr., *Covertside, Moss-lane, Ashton-on-Mersey.*
1908 ‡ Talbot, G., *Mon Plaisir, Wormley, Surrey.*
1920 ‡ Tams, W. H. T. (Council, 1927–9), 5, *Daisy-lane, Fulham*, S.W. 6.
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1914 Temperley, Reginald, *The Manor House, Merricott, Somerset.*
1932 Théry, A. C., 21, *Avenue de la Victoire, Rabat, Maroc.*
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1926 ‡ Thorpe, W. H., M.A., Ph.D., *Zoological Laboratory, The Museums, Cambridge.*
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1897 ‡ Tomlin, J. R. le B., M.A. (Council, 1911–13), 23, *Boscobel-road, St. Leonards-on-Sea.*
1907 ‡ Tonge, Alfred Ernest (Council, 1915–17, 1927–29), *Aincroft, Reigate, Surrey.*
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1906 ‡ Tulloch, Brig.-Gen. J. B. G., C.B., C.M.G., *Hill-court, Abergavenny, Monmouthshire.*
1895 ‡ Tunaley, Henry, *Castleton, Searle-road, Farnham.*
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1898 ‡ Turner, A. J., M.D., *Wickham-terrace, Brisbane, Australia.*
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1919 ‡ Ward, J. Davis, *Limehurst, Grange-over-Sands, Lancs.*
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1933 Wattison, J. T., F.G.S., *Rua da Circumvalação, Senhora da Hora, Portugal.*
1933 Welti, A., *Roswyn,* 141, *Perry Vale, Forest Hill,* S.E. 23.
1933 Welti, Mrs. I. M. T., *Roswyn,* 141, *Perry Vale, Forest Hill,* S.E. 23.
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1911–1920, 1925:
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1917 ‡ Wickham, Rev. Prebendary A. P., *East Brent Vicarage, Highbridge, Somerset.*
1926 ‡ Wigglesworth, V. B., M.A., B.Ch., M.D. (Council, 1932–), *Hedgeside, Holtspur End, Beaconsfield, Bucks.*
1923 Wightman, A. J. C., *Aurago, Pulborough, Sussex.*
1922 ‡ Wilkinson, D. S., *c/o Capt. O. M. Watts, Ltd.*, 20–22, *Maddox-street*, W. 1.
1923 Wilkinson, Harold, *Dept. of Agriculture, Nairobi, Kenya Colony.*
1911 ‡ Williams, C. B., M.A., Sc.D., *Rothamsted Experimental Station, Harpenden, Herts.*
1915 ‡ Williams, H. B., LL.D., *Redmayes*, 79, *Broad-lane, Hampton, Middx.*
1921 ‡ Willmer, E. Nevill.
1922 Wilson, F. E., *Cyathea, Ferncroft-avenue, E. Malvern, Victoria, Australia.*
1915 Winn, A. F., 32, *Springfield-avenue, Westmount, Montreal, Canada.*
1928 Winter, A. E., 148, *West End-avenue, Harrogate.*
1926 ‡ Womersley, H., 36, *Wattle-street, Fullarton Estate, Adelaide, S. Australia.*
1928 ‡ Wood, Hugh, *Rollrights, Milford-on-Sea.*
1919 ‡ Wood, H. Worsley, 37, *De Freville-avenue, Cambridge.*
1905 Woodbridge, F. C., *Briar Close, Latchmore-avenue, Gerrards Cross S.O., Bucks.*
1925 ‡ Woodcock, A. J. A., M.Sc., *Rhianva*, 65, *Rock-avenue, Gillingham, Kent.*
1925 ‡ Woodward, Capt. G. C., R.N., *Training Ship "Cornwall," Denton, nr. Gravesend, Kent.*
1921 Woolett, G. F. C., *Sipilang, Province Clarke, B.N. Borneo.*
1926 ‡ de Worms, C. G. M., M.A., D.I.C., *Milton Park, Egham, Surrey.*
1922 Wright, A. E., *Burnleigh, Kent Bank-road, Grange-over-Sands.*
1927 ‡ Wright, Rev. W. Rees, M.Sc., 4, *Hyfrydle, Quarry-road, Brynteg, Wrexham.*

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Sir G. Kenrick, Bart., cost of plates for his paper on Butterflies of Dutch New Guinea, £54.

1912.

Dr. T. A. Chapman, cost of plates for his papers on Life-histories of Lepidoptera, £35 6*s*. 5*d*.

1913.

The Royal Society, towards the publication of D. Sharp's paper on the Genitalia of Coleoptera, £60.

1914.

F. D. Godman, cost of plates for G. C. Champion's papers on Mexican and Central American Coleoptera, £22 7*s*. 6*d*.

G. T. Bethune-Baker, cost of 12 plates illustrating his Presidential Address.

1915.

J. J. Joicey, cost of plates for his papers on Lepidoptera from Dutch New Guinea, £82 11*s*.

Dr. G. B. Longstaff, cost of plates for Dr. Dixey's paper on New Pierines, £32.

1916.

Dr. T. A. Chapman, for plates, £68 7*s.* 3*d.*

1917.

Mrs. Meldola, for books for the Library, £31 10*s.*
E. E. Green, large binocular microscope.

1919.

Dr. T. A. Chapman, F.R.S., cost of plates to illustrate his papers, £56 19*s.* 3*d.*

1920.

Donations in aid of the purchase of 41 Queen's Gate—
  Dr. G. B. Longstaff, £1000.
  The Honble. N. C. Rothschild, £500.
  Dr. H. Eltringham, Sir G. H. Kenrick, The Rev. F. D. Morice, W. G. Sheldon, each £100.
  R. Adkin, G. T. Bethune-Baker, Dr. T. A. Chapman, W. M. Christy, H. Massey, Prof. E. B. Poulton, each £50.
  B. H. Crabtree, E. E. Green, Dr. G. A. K. Marshall, G. A. J. Rothney, each £25.
  H. E. Andrewes, £21.
  H. J. Elwes, E. B. Nevinson, G. T. Porritt, O. Whittaker, each £20.
Dame Alice Godman, book-shelves and fittings for the Library.
J. J. Joicey, in aid of the furnishing of 41 Queen's Gate, £100.
Dr. T. A. Chapman, F.R.S., cost of plates to illustrate his paper, £30.

1921.

Donations in aid of the purchase of 41 Queen's Gate—
  The Rt. Hon. Lord Rothschild, £105.
  W. M. Christy, £50, making with a similar donation in 1920, £100 in all.
  W. G. F. Nelson, £63, reduction of solicitor's charges.
  W. J. Kaye, £50.
  W. Schmassman, £50.
  R. Adkin, £40, cancellation of debentures drawn.
  E. C. Bedwell, £28 7*s.* 6*d.*, reduction of surveyor's charges.
  H. Willoughby Ellis, £26 5*s.*
  Lt.-Col. R. S. Wilson, £25.
  H. St. John Donisthorpe, £21.
  Miss E. F. Chawner, £20.
  Sir John T. D. Llewelyn, Bart., £20.
  K. J. Morton, £20.
J. J. Joicey, Lantern and Stand for the Meeting Room.
Dr. T. A. Chapman, F.R.S., £29 5*s.*, to illustrate his paper in the Transactions, 1920.
The Rt. Hon. Lord Rothschild, £22 15*s.* 4*d.*, cost of plates in the Proceedings for 1920.
Jesus College, Oxford, through Prof. E. B. Poulton, F.R.S., £100.

1922.

Donations in aid of the purchase of 41 Queen's Gate—
  The Misses Chapman, in memory of their brother, the late Dr. T. A. Chapman, F.R.S., £500.
  G. A. J. Rothney (bequest), £150.
  R. Adkin, £70, cancellation of debentures drawn.
  E. E. Green, £25 (making £50 in all).
  W. H. B. Fletcher, £25.
  Sir A. Buchan-Hepburn, Bart., £20.
  E. W. Adair, £20.
The Misses Chapman, two bookcases.

1923.

Donations in aid of the purchase of 41 Queen's Gate—
  The Honble. N. C. Rothschild (bequest), £1000.
  R. Adkin, £90, cancellation of debentures drawn (making £200 in all).
  A. C. F. Morgan, £20.
  H. J. Turner, £20.

1924.

Donations in aid of the purchase of 41 Queen's Gate—
E. B. Bostock, £21.
Miss M. E. Fountaine, £20.

H. H. C. J. Druce (bequest £1000), interest to be spent on new books.

Prof. E. B. Poulton, F.R.S., authorised contribution from the Fund for promoting the study of organic and social evolution, presented to the University of Oxford by Professor J. Mark Baldwin, £130 15*s.* 4*d.*

Jesus College, Oxford, through Prof. E. B. Poulton, F.R.S., £125.

H. Willoughby Ellis, contribution towards new electric light installation at 41 Queen's Gate, £50.

1925.

A. H. Jones (bequest) £100.

G. T. Bethune-Baker, £30, towards the cost of the plates in his paper.

E. A. Elliott, in continuation of his practice since 1908, Wytsman's "Genera Insectorum," amounting to a total value of £225.

The Royal Society, £100, towards the cost of Mr. H. S. Pruthi's paper.

1926.

The Royal Society, £150, towards the cost of Mr. Warren's paper.

1927.

Rev. F. D. Morice (bequest) £200.

Prof. E. B. Poulton, F.R.S., authorised contribution from the Fund for promoting the study of organic and social evolution, presented to the University of Oxford by Professor J. Mark Baldwin, £40 16*s.*

1928.

Col. J. W. Yerbury (bequest) £50.

1929.

The Empire Marketing Board, £96 8*s.* 5*d.*, the entire cost of Mr. B. P. Uvarov's paper.

Prof. E. B. Poulton, F.R.S., authorised contribution from the Fund for promoting the study of organic and social evolution, presented to the University of Oxford by Professor J. Mark Baldwin, £85 11*s.*

The Royal Society, £90, towards the cost of Mr. F. W. Edwards' paper.

1930.

R. W. Lloyd, the entire cost of the panelling and ceiling in the new Meeting Room, together with the Presidential Desk and Chair.

R. Adkin, the entire cost of the Epidiascope and screen.

Dr. K. Jordan, £50 donation in aid of building the new Meeting Room.

H. Willoughby Ellis, £50 donation in aid of building the new Meeting Room.

Dr. R. Stewart MacDougall, £110, being the cost of a bookcase and table for the Library, in memory of his wife.

Jesus College, Oxford, through Professor E. B. Poulton, F.R.S., £25.

Mdme. A. de Horrack-Fournier, cost of plate illustrating Mr. Lathy's paper, £20 5*s.*

The Trustees of the Carnegie (U. K.) Fund, £500 for the purchase of books for the Library.

Mrs. Eaton, a selection of books from the Library of her husband.

E. A. Elliott, in continuation of his practice since 1908, Wytsman's "Genera Insectorum."

P. I. Lathy, "Théses entomologiques," copy No. 2, including a proof set of the plates, uncoloured.

1931.

Empire Marketing Board, towards the cost of Mr. B. P. Uvarov's paper, £231.

Prof. E. B. Poulton, F.R.S., authorised contribution from the Fund for promoting the study of organic and social evolution; presented to the University of Oxford by Professor J. Mark Baldwin, £110.

Jesus College, Oxford, through Prof. E. B. Poulton, F.R.S., £20.

Board of the Carnegie Fund in South Africa, the entire cost of the plates illustrating Prof. A. J. T. Janse's paper.

1932.

Prof. R. Meldola, legacy, £450.

Prof. E. B. Poulton, F.R.S., authorised contribution from the Fund for promoting the study of organic and social evolution; presented to the University of Oxford by Professor J. Mark Baldwin, £50.

Jesus College, Oxford, through Prof. E. B. Poulton, F.R.S., £30.

Dr. F. Morton Jones, cost of plate illustrating his paper, £20 10*s*.

Donations to Centenary Fund—
- Fleet-Paymaster T. Bainbrigge Fletcher, R.N., £35.
- C. W. M. Praed, £26 5*s*.
- R. Adkin, £25.
- Prof. W. A. F. Balfour-Browne, F.R.S.E., £20.
- Dr. H. Eltringham, F.R.S., £20.

1933.

Donations to Centenary Fund—
- Prof. E. B. Poulton, F.R.S., £100.
- Prof. W. A. F. Balfour-Browne, F.R.S.E., £20, making with a similar donation in 1932, £40 in all.
- H. Willoughby Ellis, £20.
- Lord Rothschild, F.R.S., £20.
- Empire Marketing Board, towards the cost of the paper by O. W. Richards and W. S. Thomson, £75.
- The High Commissioner for India, towards the cost of the paper by U. S. Sharga, £30.

CHARTER AND BYE-LAWS

OF THE

ROYAL ENTOMOLOGICAL SOCIETY

OF

LONDON

FOUNDED IN 1833

INCORPORATED BY ROYAL CHARTER IN 1885

Revised to December, 1929

CONTENTS.

PAGE
CHARTER xliii

BYE-LAWS.

CHAPTER I.—*Object of the Society* xlv
,, II.—*Constitution of the Society* xlv
,, III.—*Management* xlv
,, IV.—*Officers* xlv
,, V.—*Officials* xlv
,, VI.—*Removal or Resignation of Officers* xlvi
,, VII.—*Of the President* xlvi
,, VIII.—*Of the Vice-Presidents* xlvi
,, IX.—*Of the Treasurer* xlvi
,, X.—*Of the Secretary* xlvii
,, XI.—*Of the Registrar* xlvii
,, XII.—*Library Regulations* xlviii
,, XIII.—*Election of Council* xlix
,, XIV.—*Election of Fellows* l
,, XV.—*Of the Admission Fee and Annual Contribution* . li
,, XVI.—*Withdrawing and Removal of Fellows* li
,, XVII.—*Privileges of Fellows* lii
,, XVIII.—*Honorary Fellows* lii
,, XIX.—*Special Life Fellows* liii
,, XX.—*Benefactions* liii
,, XXI.—*Ordinary Meetings of the Society* liii

PAGE
CHAPTER XXII.—*Special Meeting* liv
,, XXIII.—*Annual Meeting* liv
,, XXIV.—*Transactions and Journal of Proceedings* . . liv
,, XXV.—*Alteration of the Bye-Laws* liv
,, XXVI.—*Prohibition in respect of Funds* . . . liv

THE SCHEDULE.

Containing Form of Balloting List for the Election of Officers and Council lv

CHARTER.

Victoria, by the Grace of God of the United Kingdom of Great Britain and Ireland, Queen, Defender of the Faith. TO ALL TO WHOM these presents shall come Greeting:

Whereas Joseph William Dunning, of Lincoln's Inn, in the County of Middlesex, Barrister-at-Law, Esquire, Master of Arts, formerly Fellow of Trinity College, Cambridge, Fellow of the Cambridge Philosophical Society and of the Linnean and Zoological Societies of London, has by his Petition humbly represented unto US, That in the year 1833 certain of our loyal subjects formed themselves into a Society for the Improvement and Diffusion of Entomological Science, and subscribed and expended considerable sums of money for such purposes, and have collected and become possessed of a valuable library and other property, and have been and continue to be actively employed in promoting the objects for which the said Society was founded, especially by the publication of Volumes of Transactions composed of Original Memoirs, read before the Society. And whereas the said Petitioner, believing that the well-being and usefulness of the said Society would be most materially promoted by obtaining a Charter of Incorporation, hath therefore, on behalf of himself and the other Members of the said Society, most humbly prayed that WE would be pleased to grant a Royal Charter for incorporating into a Society the several persons who have already become Fellows, or who may at any time hereafter become Fellows thereof, subject to such Regulations and Restrictions as to US may seem good and expedient. NOW KNOW YE that WE, being desirous of encouraging a design so laudable, and of promoting the improvement and diffusion of Science in all its branches, have of Our especial Grace, certain Knowledge and mere Motion, given and granted, and We do hereby give and grant, That the said Joseph William Dunning and such others of Our loving subjects as are now Fellows of the said Society, or who shall at any time hereafter become Fellows thereof in pursuance of the provisions of this Our Charter and according to such Bye-Laws as are hereinafter mentioned, shall be a Body Corporate by the name of "The Entomological Society of London," having perpetual succession and a common seal, with power to sue and to be sued in their Corporate name, and to acquire and hold any goods and chattels whatsoever.

And our Will and Pleasure is, That John Obadiah Westwood, Esq., Master of Arts, Hope Professor of Zoology in the University of Oxford, shall be Honorary President of the said Corporation during the term of his natural life. And that Robert MacLachlan, F.R.S., shall be the first President of the said Corporation and shall continue such until the Annual Meeting to be held in the month of January next.

And our Will and Pleasure is, And we do hereby declare, That there shall always be a Council to direct and manage the concerns of the said Corporation. And that the thirteen persons, who were elected to form the Council of the said Society at the Annual Meeting held in the month of January last, shall form the first Council of the said Corporation, and shall continue in Office until the Annual Meeting to be held in the month of January next.

And our Will and Pleasure is, And we further grant and declare, that the existing Bye-Laws of the said Society, as revised and amended at a General Meeting held on the 2nd day of May, 1883, shall be the Bye-Laws of the said Corporation, until the same shall be revoked or altered as hereinafter mentioned. And that it shall be lawful at General Meetings of the said Corporation to revoke or alter any former Bye-Laws, and to make such new Bye-Laws as shall be deemed useful and necessary for the regulation of the said Body Corporate.

Provided always: And we lastly declare it to be our Royal Will and Pleasure, That no Bye-Law or Resolution shall, on any account or pretence whatsoever, be made by the said Corporation in opposition to the general scope, true intent, and meaning of this our Charter or the Laws and Statutes of this Realm, and that if any such Bye-Law or Resolution shall be made, the same shall be absolutely null and void.

In Witness whereof We have caused these our Letters to be made Patent.

THE SEAL.

WITNESS Ourself at Westminster the twentieth day of July, in the Forty-ninth year of Our Reign.

By Warrant under the Queen's Sign Manual.

Grant by His Majesty the King of permission to add the word "Royal" to the Society's title.

HOME OFFICE,
WHITEHALL.

242,498/4.

15*th April*, 1933.

SIR,

I am directed by the Secretary of State to inform you that the Petition, enclosed in your letter of the 27th February last, of the Entomological Society of London for permission to use the title "Royal" in the name of the Society has been laid before the King, and that His Majesty has been graciously pleased to command that the Society shall henceforth be known as "The Royal Entomological Society of London."

I am,
Sir,
Your obedient Servant,
A. MAXWELL.

The Treasurer,
The Entomological Society of London,
41, *Queen's Gate,*
South Kensington,
S.W.7.

BYE-LAWS.

As Amended at a Special Meeting, 4th December, 1929.

Chap. I. *Object.*

The Royal Entomological Society of London is a Scientific Society instituted for the improvement and diffusion of Entomological Science exclusively.

Chap. II. *Constitution.*

The Society shall consist of Honorary, Special Life, and Ordinary Fellows

Chap. III. *Management.*

§ 1. The affairs of the Society shall be conducted by a Council consisting of the Officers of the Society hereinafter mentioned—other than the three Vice-Presidents—and of fourteen ordinary Members to be chosen annually from among the Fellows. No Fellow shall be eligible as an ordinary Member of the Council until he shall have been a Fellow for three consecutive years, nor shall any Fellow, including Vice-Presidents and Co-opted Members, serve for more than three years successively. Five shall be a quorum.

§ 2. The Council shall have power to appoint Committees to assist them in the discharge of particular aspects of their duties, and may delegate to such Committees, which may consist, in part, of Fellows of the Society who are not members of the Council, such power or powers as the Council in their absolute discretion may think fit.

Chap. IV. *Officers.*

The Officers of the Society shall consist of a President; three Vice-Presidents; a Treasurer; and a Secretary. The Officers shall be chosen annually. No Fellow shall be President, or a Vice-President, more than two years successively.

Chap. V. *Officials.*

§ 1. The Council shall have power to appoint a permanent Officer, to be styled Registrar, who shall not be a Fellow of the Society or, if a Fellow, shall vacate his Fellowship on appointment to the said office and shall be ineligible for re-election for so long as he may continue to be so employed. The Council in whom the power of appointing or removing the Registrar shall be vested, shall have power to determine from time to time the rate or rates of remuneration of that official.

§ 2. In addition, the Council may at any time employ a Sub-Librarian or other official, or a caretaker or other employee, who shall not be a Fellow of the Society, and any official or other person so employed shall receive such remuneration as the Council may from time to time determine, and shall be subject to such Rules or Orders as the Council, through its officers, may from time to time direct.

Chap. VI. *Removal or Resignation of Officers.*

§ 1. For any cause which shall appear sufficient to a two-thirds majority thereof, the Council shall have power to suspend any Officer of the Society from the exercise of his office, or to remove him and declare such office vacant.

§ 2. In the event of any vacancy occurring in the Council or Officers of the Society, at the next meeting of Council after such vacancy has been made known, the Council shall elect some Fellow to fill the vacancy till the Annual Meeting.

Chap. VII. *President.*

§ 1. The duty of the President shall be to preside at the Meetings of the Society and Council, and regulate all the discussions and proceedings therein, and to execute or see to the execution of the Bye-Laws and orders of the Society.

§ 2. In case of an equality of Votes the President shall have a double or casting Vote.

Chap. VIII. *Vice-Presidents.*

§ 1. The Vice-Presidents shall be nominated by the President, from amongst the members of the Council. Such nomination shall be declared at the Ordinary Meeting next after the election of the President in every year.

§ 2. In the absence of the President a Vice-President shall fill his place, and shall for the time being have all the authority, power, and privilege of the President.

§ 3. In the absence of all the Vice-Presidents a Member of the Council shall preside; and if no Member of the Council be present at an Ordinary Meeting, the Fellows present shall appoint by a majority to be Chairman such Fellow as they shall think fit; and the Member of Council so presiding, or the Fellow so appointed, shall for the time being have all the authority, power, and privilege of the President.

Chap. IX. *Treasurer.*

§ 1. The duties of the Treasurer shall be as set out in the following sections :

§ 2. The Treasurer shall be responsible for demanding and receiving for the use of the Society all sums of money due, or payable, to the Society, and for directing the due disbursement by the Registrar of all moneys payable by the Society out of the funds in his hands.

§ 3. It shall further be the duty of the Treasurer to exercise general superintendence over the Registrar in respect of the financial duties of that official as hereinafter defined in Chapter XI, Sections 2 to 5, of these Bye-Laws.

§ 4. No payment exceeding £10 shall be made or authorised by the Treasurer unless the previous consent of the Council or of a Finance Committee appointed by it has been obtained.

§ 5. All cheques drawn on the Society's bank in payment of the Society's obligations shall be signed by the Treasurer, or in his absence by such other Fellow as the Council may appoint, who shall be responsible that such payments have been authorised in accordance with Section 4 above.

At a convenient date towards the close of each year the Treasurer shall cause to be prepared by the Registrar a Statement of the Society's financial affairs for submission to the Auditor appointed by the Council as hereinafter provided, to whom he shall furnish all the facilities that the Auditor may demand for the auditing of the accounts.

§ 6. The Treasurer shall each year sign the accounts and shall submit them when audited to the Council; and at the Annual Meeting, as hereinafter provided, shall submit to the Society his Report for the year and the Statement of the Society's financial affairs.

§ 7. In the absence of the Registrar through ill-health or for any other cause, or during any vacancy of the office of Registrar, the Treasurer shall be responsible for the due performance of the financial duties assigned to the Registrar in Chapter XI, Sections 2 to 5, of these Bye-Laws.

§ 8. The Council shall nominate every year a Chartered or Incorporated Accountant who shall audit the Treasurer's accounts for that year. The Council shall have authority to pay the Auditor each year a fee of such amount as in their discretion they may from time to time determine.

CHAP. X. *Secretary.*

§ 1. The duties of the Secretary shall be as set out in the following sections:

§ 2. It shall be the duty of the Secretary to exercise general supervision over the Registrar in respect of the duties of that official as defined in Chapter XI, Sections 6 to 8, of these Bye-Laws.

§ 3. The Secretary shall be responsible to the Council for the proper conduct of all correspondence (other than financial) on behalf of the Society, but he shall have authority to delegate to the Registrar the conduct under his directions of particular classes of correspondence.

§ 4. The Secretary shall present to the Council and to its Committees the minutes prepared under his direction by the Registrar; and shall also present to the Society the minutes similarly prepared of its Meetings.

§ 5. The Secretary shall act as Editor of the Society's Publications.

§ 6. In the absence of the Registrar through ill-health or for any other cause, or during any vacancy in the office of Registrar, the Secretary shall be responsible for the due performance of the duties assigned to the Registrar in Chapter XI, Sections 6 to 8, of these Bye-Laws.

§ 7. In the absence of the Secretary from any Meeting of the Society, or of the Council, the Chairman of such Meeting shall appoint a Fellow to perform the duties assigned to the Secretary in Section 4 above.

CHAP. XI. *Registrar.*

§ 1. The duties of the Registrar shall be as set out in the following sections:

Financial Duties.

§ 2. Subject to the general direction of the Treasurer, it shall be the duty of the Registrar to keep books of Cheque receipts for Admission Fees, Annual Payments and any other necessary purposes, to sign each such receipt and to add in every case on both the receipt and the counterfoil the name of the Fellow or other person paying and the date on which the payment is made; and to make such payments on behalf of the Society as the Treasurer may direct in accordance with the provisions of Chapter IX, Section 4, of these Bye-Laws.

§ 3. The Registrar shall demand all arrears of payment of the annual subscriptions of Fellows after such payment shall have been due two calendar months.

§ 4. The Registrar shall each year prepare for submission to the Treasurer a Statement of the Society's financial affairs for submission to the Auditor appointed by the Council, and shall assist the Treasurer in furnishing the Auditor with all particulars that he may require.

§ 5. The Registrar shall act under the direction of the Treasurer in connection with the sale of the Society's Publications, and generally in regard to matters affecting the financial affairs of the Society.

Secretarial Duties.

§ 6. Subject to the general direction of the Secretary, it shall be the duty of the Registrar to keep a list of all Fellows of the Society, together with their last known addresses; to summon Meetings of the Society, and of the Council and its Committees, when directed to do so by the Secretary; to conduct such correspondence connected with the Society as the Secretary or the Treasurer in financial matters may direct; to prepare for submission to the Secretary the Minutes of the Proceedings at the Meetings of the Society and the Council; to act as Sub-Editor of the Society's Publications; and generally to act under the direction of the Secretary in all matters (other than as provided in Sections 2 to 5 above) affecting the welfare of the Society.

Library Duties.

§ 7. Subject to the general direction of the Secretary, it shall be the duty of the Registrar to superintend the use of the Library; to take care of all books and manuscripts belonging to the Society; to maintain the Catalogue thereof, with the names of the Donors in the case of books or MSS. presented to the Society; to recall in accordance with the Library Regulations all books borrowed by the Fellows; and generally to see that the Regulations affecting the Library and its use are observed.

§ 8. It shall further be the duty of the Registrar under the general direction of the Secretary to prepare from time to time for the consideration of the Council (or of any Committee appointed by the Council for the purpose), lists of books and periodicals not in the possession of the Society for purchase by the Council; and he shall be responsible for the due execution of any directions in regard thereto that may be given to him by the Council or by such Committee appointed by the Council.

CHAP. XII. *Library Regulations.*

§ 1. The Library shall be open for the purpose of reading and for the issue of books on loan at the following times :—

(*a*) 10 a.m. to 6 p.m. on Mondays, Tuesdays, Wednesdays (except on Meeting days, when the Library shall remain open until 10 p.m.), Thursdays, and Fridays;

(*b*) 10 a.m. to 1 p.m. on Saturdays.

The Library shall be closed on and from Good Friday to 10 a.m. the following Tuesday, and upon all other customary Holidays. It shall also be closed annually for cleaning purposes for such a period not exceeding one month, as the Council may from time to time determine.

§ 2. The Library shall be available for the reading of books, to all Fellows and to strangers personally accompanied by a Fellow. No stranger unaccompanied by a

Fellow shall be allowed access to the Library except with the permission of the Council, or of such officer or official as the Council may from time to time authorise to act in this matter on their behalf.

§ 3. Books other than those specified in the following section may be borrowed from the Library by all Fellows, subject, as provided in Chapter XVII, section 2 of these Bye-Laws, to the condition that no book may be issued on loan to Fellows who in any year have failed to pay their annual contribution by July 1st, until such contribution shall have been paid.

§ 4. The following classes of books may not be borrowed by Fellows except by special permission of the Secretary, *viz.* :—

(*a*) Dictionaries, Encyclopædias, and other Works of Reference, Atlases, Books, and Illustrations in loose sheets, Drawings, Manuscripts, unbound numbers of Periodicals, and works of great value or special interest (of which latter a list approved by the Council shall be open to inspection in the Library).

(*b*) New works before the expiration of two months after their receipt.

§ 5. The title of every Book, Pamphlet or Work of any kind lent shall first be entered in the Library Loan Book by the Registrar or Sub-Librarian, to whom application shall be made by the Fellow who wishes to borrow it.

§ 6. Books and other Works may be borrowed for a period of one month. Such Book or other Work may be re-entered in the Library Loan Book for further monthly periods, on the request of the Fellow by whom it has been borrowed, provided that no application shall have been made for it in the meantime by another Fellow.

§ 7. No Book or other Work may be taken abroad by Fellows or sent to any place outside the British Isles except by special permission of the Secretary.

§ 8. In all cases a list of the Books or other property of the Society in the possession of any Fellow shall be rendered by him to the Registrar between September 20th and 30th in each year.

§ 9. Any loss of, or damage to, any Book or other property of the Society shall be made good by the Fellow responsible therefor, in such manner as the Council may prescribe.

§ 10. Fellows and other persons authorised to make use of the Library shall hand all books that they have used to the Registrar or Sub-Librarian, by whom alone such books may be replaced on the shelves.

§ 11. The Council shall have power to authorise the issue of books on loan to Institutions or individuals not being Fellows, on such conditions as they may from time to time determine.

§ 12. The names of Fellows transgressing the provisions of this Chapter shall be reported by the Secretary to the Council, who may take such steps as in their judgment the case requires.

CHAP. XIII. *Election of Council.*

§ 1. The Council for the time being shall annually cause to be prepared a list which shall contain the names of such Fellows, being eligible, as they shall recommend to fill the offices of President, Treasurer, and Secretary for the year ensuing; and also the names of such Fellows as they shall recommend to be re-elected, and of other Fellows to be elected into the Council. The list shall include the names of fourteen Fellows recommended as ordinary members of the Council.

§ 2. The list prepared by the Council shall be read at the Ordinary Meeting next but one before the Annual Meeting, and a copy sent, not less than seven days before the December meeting, to every Fellow whose last known residence shall be in the United Kingdom. At the Ordinary Meeting preceding the Annual Meeting, the names of other candidates to fill any of the offices, or to serve as Members of the Council (each proposed and supported by at least four properly qualified Fellows of the Society), shall be received. Nominations by post made by four properly qualified Fellows, and received prior to this Meeting, shall also be accepted. Any such names shall be added to the Council's list, and a copy of the complete list shall, before the 31st December, be transmitted to every Fellow whose last known residence shall be in the United Kingdom, and who shall have paid his subscription for the current year.

§ 3. If no more than the number of Fellows required to fill any Office or to form the Council shall have been nominated, no second list shall be issued; but the President shall, at the Annual Meeting, declare the Council's nominees to be appointed.

§ 4. Where nominations shall have been received in addition to those upon the List prepared as aforesaid by the Council, then the Election shall proceed as hereafter appointed; but such Election shall only be held in respect of any Office or Position to which more than the required number of Fellows shall have been nominated; and the second List shall contain in alphabetical order the whole of the nominations, original and supplementary, for such Office or Position only.

§ 5. The election, if any be necessary, shall be by Ballot at the Annual Meeting, and copies of the final list shall be used as Ballot papers. The President shall appoint two or more Scrutineers from the Fellows present, not being Members of the Council, to superintend the Ballots and report the results to the Meeting. The Secretary, assisted by the Treasurer, shall prepare a list of the Fellows entitled to vote, and each Fellow voting shall give his name to the Scrutineers to be marked on the said List, and shall then put his Ballot paper into the respective receptacles to be provided for such occasion.

§ 6. A Fellow voting may strike out any name or names on the said List, and the Scrutineers shall record the votes accordingly, but any Ballot paper which shall contain a greater number of names for any Office or Position than the number to be elected to such Office or Position shall be wholly void, and be rejected by the Scrutineers. No Ballot shall be taken unless nine or more Fellows shall be present.

§ 7. If from any cause any election which ought to take place at the Annual Meeting shall not take place, then such election shall be adjourned until the next convenient day, of which notice shall be given in like manner as is directed for the Annual Meeting.

§ 8. The form given in the Schedule shall be used, with such variations as may be considered by the Council necessary or desirable.

CHAP. XIV. *Election of Fellows.*

§ 1. Every Candidate for admission into the Society shall be proposed by three or more Fellows, to one of whom he shall be personally known, and they must sign a Certificate in recommendation of him. The Certificate shall specify the name and usual place of residence of the Candidate.

§ 2. The Certificate having been read at one of the Ordinary Meetings shall be suspended in the Library, read again at the following Ordinary Meeting, and the person therein recommended shall be balloted for at the next Ordinary Meeting.

§ 3. The method of voting shall be by ballot, and two-thirds of the Fellows balloting shall elect.

§ 4. Every Fellow shall sign the * Obligation Book of the Society at the first Ordinary Meeting of the Society at which he is present, and shall then be admitted in manner and form following; The President taking him by the hand shall say: A.B. in the name and by the authority of the Royal Entomological Society of London, I hereby admit you a Fellow thereof.

§ 5. Every Fellow shall on election have immediate notice conveyed to him by the Secretary of his election, accompanied by a copy of the Charter and Bye-laws.

§ 6. Every Fellow on election shall sign an Obligation for the regular payment of his Annual Contribution, so long as he shall continue a Fellow, and if any Fellow shall not sign such Obligation within six months after his election, the said election shall become void, unless the Council shall otherwise decide.

Chap. XV. *Admission Fee and Annual Contribution.*

§ 1. Every Fellow upon his election shall pay the sum of Three Guineas for his Admission Fee, and if any Fellow shall fail to pay such sum within six months after his election, the said election shall become void, unless the Council shall otherwise decide.

§ 2. Every Fellow shall upon his election pay the first Annual Contribution of Two Guineas, and if any Fellow shall fail to pay such sum within six months after his election the said election shall become void, unless the Council shall otherwise decide. He shall pay the like sum annually in advance on the 1st day of January in each year, provided however that any Fellow elected after September in each year will not be called upon to pay his Contribution unless he desires to receive the Publications for the year in which he is elected.

§ 3. Every Fellow shall pay the Annual Contribution of two guineas except:

(*a*) Those Fellows who have compounded, and

(*b*) Such Fellows who, having been elected before January 1st, 1921, shall have given notice in writing to the Treasurer, not later than the date fixed for these Bye-Laws to come into operation, that they do not desire to receive the Transactions of the Society, in which case their Annual Contribution shall be one guinea.

Chap. XVI. *Withdrawing and Removal of Fellows.*

§ 1. Every Fellow, having paid all sums due to the Society, shall be at liberty to withdraw therefrom upon giving notice in writing to the Treasurer.

§ 2. Whenever written notice of a motion for removing any Fellow shall be delivered to the Secretary, signed by the President or Chairman for the time being on the part of the Council, or by six or more Fellows, such notice shall be read from the Chair at the two Ordinary Meetings immediately following the delivery thereof, and the next following Ordinary Meeting shall be made a Special Meeting and the Fellows summoned accordingly, when such motion shall be taken into consideration and decided by ballot; whereat if a two-thirds majority of the Fellows balloting shall vote that such Fellow be removed, he shall be removed from the Society.

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* The Obligation is as follows:—

"We who have hereunto subscribed do hereby promise, each for himself, that we will endeavour to promote the good of the Royal Entomological Society of London and to pursue the ends for which the same was instituted; that we will be present at the meetings of the Society as often as conveniently we can, especially at the Anniversary elections and upon extraordinary occasions; and that we will observe the Statutes, Bye-laws and orders of the said Society; provided that whensoever any of us shall signify to the Secretary, under his hand, that he desires to withdraw from the Society, he shall be free from this Obligation for the future."

§ 3. On the first day of September in each year the Council shall cause to be suspended in the Library of the Society a list of the Fellows who owe more than two Annual Contributions. If the Contribution due from any Fellow named in the said list shall not have been paid within three months after the first suspension of the list, the Council may remove such Fellow from the Society, but notwithstanding such removal any Fellow so removed shall continue liable to pay, and may be sued for the recovery of any money due from him to the Society. The Council may cause the name of any Fellow removed under this Section, with the reason for his removal to be printed in the Proceedings of the year in which he is removed. The Council may remit wholly, or in part, the contributions due from any Fellow.

Chap. XVII. *Privileges of Fellows.*

§ 1. Subject to the provisions of Section 2 of this Chapter, Fellows have the right to be present, to state their opinions, and to vote, at all General Meetings; to propose Candidates for admission into the Society; to introduce Visitors at General Meetings of the Society; to have personal access, and to introduce scientific strangers, to the Library; and Fellows who have paid the Annual Contribution for the year shall be entitled to receive a copy of the Transactions published during the year.

§ 2. Fellows who have failed to pay their annual contribution by July 1st shall not be entitled to the enjoyment of any of the privileges set out in the foregoing section until such contribution shall have been paid.

§ 3. A Fellow shall not be eligible to any office in the Society, or to the Council, unless he shall have paid his Annual Contribution for the year previous to that in which the Election takes place.

§ 4. No person shall have his name printed in the Annual List of Fellows of the Society, until such person shall have paid the Admission Fees and signed the Obligation for the payment of Annual Contributions, and no such person shall have liberty to vote at any Election or Meeting of the Society before he shall have been admitted as directed in Chapter XIV, Section 4.

Chap. XVIII. *Honorary Fellows.*

§ 1. Every person proposed as an Honorary Fellow shall be recommended by the Council; and shall be balloted for, and, if elected, be liable to be removed in the like form and manner, and be subject to the same rules and restrictions, as an Ordinary Fellow.

§ 2. Honorary Fellows shall be exempt from the payment of Fees and Contributions, and shall possess all the privileges of Ordinary Fellows.

§ 3. No British Subject shall be an Honorary Fellow.

§ 4. The number of Honorary Fellows shall not exceed twelve.

CHAP. XIX. *Special Life Fellows.*

§ 1. Fellows, being British Subjects, who have paid subscriptions as Ordinary Fellows for not less than fifteen years, and who in the opinion of the Council have rendered distinguished service to Entomological Science, may be elected Special Life Fellows, in the manner provided under Chapter XVIII, Section 1, for the Election of Honorary Fellows, and after election they shall be exempt from the payment of fees and contributions, and shall possess all the privileges of, and shall be subject to, the same rules and restrictions as Honorary Fellows.

§ 2. The number of Special Life Fellows shall not exceed twelve.

CHAP. XX. *Benefactions.*

§ 1. In the printed Proceedings of the Society an annual record shall be kept of all donations, so far as known, that have at any time been made to the Society, of the value of £20 and upwards.

§ 2. In every volume presented to and accepted by the Society, a notice shall be inserted, and when necessary be renewed, containing the name of the donor and the date of the gift.

CHAP. XXI. *Ordinary Meetings of the Society.*

§ 1. The Ordinary Meetings of the Society shall be held on the first Wednesday in each month (except January, July, August and September), and on the third Wednesday of March, October and November, beginning at eight o'clock in the evening, or at such other days or times as the Council shall from time to time direct.

§ 2. At the Ordinary Meetings, unless otherwise announced by the President or Chairman, the order of business shall be as follows :—

(1.) The Minutes of the last Meeting shall be read aloud by the Secretary, proposed for confirmation by the Meeting, and signed by the President.
(2.) Donations made to the Society since the last Meeting shall be announced.
(3.) Certificates in favour of Candidates for admission into the Society shall be read, and Candidates shall be balloted for.
(4.) Fellows shall sign their names in the Obligation Book, and be admitted.
(5.) Exhibitions of specimens, &c., shall be made.
(6.) Entomological communications shall be announced and read either by the Author, or by some other Fellow deputed by him, or by the Secretary.
(7.) Business not specified in the above order and discussions arising out of the exhibitions and communications shall be taken at such times and in such manner as the President shall direct.

§ 3. All Memoirs which shall be read at any Meeting of the Society, and accepted for publication, shall become the property of the Society, unless otherwise stipulated before the reading thereof.

§ 4. No Motion relating to the Government of the Society, its Bye-Laws, the management of its concerns, or the election, appointment, or removal of its Officers shall be made at any Ordinary Meeting.

CHAP. XXII. *Special Meeting.*

§ 1. By resolution of the Council, or upon the requisition of six or more Fellows, presented to the President and Council, a Special General Meeting of the Society shall be convened; a notice thereof shall be sent to every Fellow whose last known residence shall be in the United Kingdom, at least seven days before such Meeting shall take place: and any motion to be submitted to such Meeting which involves a substantive proposition and is not of the nature of an amendment shall be stated at length in such notice.

§ 2. No vote shall be taken at any Special Meeting unless nine or more Fellows shall be present.

CHAP. XXIII. *Annual Meeting.*

§ 1. The Annual Meeting of the Society shall be held on the third Wednesday in January.

§ 2. Notice of the Annual Meeting shall be sent to every Fellow whose last known residence shall be in the United Kingdom, at least seven days before such Meeting shall take place.

§ 3. The objects of the Meeting shall be to receive from the Council, and hear read, their Annual Report on the general concerns of the Society, to receive from the Treasurer, and hear read, his report and the Statement of the Society's financial affairs, and to elect the Council and Officers for the ensuing year.

CHAP. XXIV. *Transactions and Journal of Proceedings.*

§ 1. The Transactions shall consist of such papers communicated to the Meetings of the Society as the Council shall order to be published therein.

§ 2. The Transactions shall be published quarterly, or at such other times, and at such prices as the Council shall direct for each Part or Volume.

§ 3. Authors of Memoirs published in the Transactions shall be allowed twenty-five copies of their communications gratis. If any additional number be required, the permission of the Council shall be first obtained, and the entire expense thereof shall be paid for by the Authors.

§ 4. A Journal of Proceedings of the Society shall also be published, containing Titles of the Papers read and Notices of other Matters communicated at the Ordinary Meetings of the Society.

CHAP. XXV. *Alteration of the Bye-Laws.*

§ 1. Any of the Bye-Laws of the Society may at any time be repealed or altered, or others adopted in lieu thereof, at a Special Meeting of the Society, to be held after a Notice given to the President and Council, signed by six Fellows at least, and specifying the intended repeal or alteration, has been read at three Ordinary Meetings of the Society.

§ 2. In the event of any such alteration being made, a copy of the altered Bye-law or Bye-laws shall be issued with the last-published Part of the Proceedings for the current year.

CHAP. XXVI. *Prohibition in respect of Funds.*

The Society shall not and may not make any dividend, gift, division or bonus in money unto or between any of its members.

THE SCHEDULE REFERRED TO IN CHAPTER XIII.

Balloting List for the Election of Officers and Council.

Office.	List.
President.	Z. A.
Treasurer.	W. D.
Secretary.	T. G. S. H.
Council.	A. B. C. D. E. F. G. H. I. J. K. L. M. N. O. P. Q. R. S. T. U. V. W. X., etc.

Instructions.

In using the above list as a Ballot Paper a Fellow voting may strike out any name or names printed therein, but any Ballot Paper which when placed in the receptacle shall contain a greater number of names for any Office or Position than the number to be elected to such Office or Position shall be wholly void and rejected by the Scrutineers.

which it planed round over the trees and disappeared. I called back to my friend—'It's a ♀ *cenea* and is ovipositing; I'll wait for it to come back.' Within a few minutes back it came and suddenly planed over my head in full perfect view. I then saw it was *Euxanthe wakefieldi*, ♀, once more. There was no doubt whatever.

"Now note the interesting points: not only colour and size resemblance, but flight as compared with the ♂, is 'Papilionine' or 'Amaurine' and not at all 'Charaxidine,' and also the habit of settling is modified to that of the typical ♀ *cenea* or *A. dominicanus*. As ♀ *cenea* mimics *A. dominicanus* it seems to me the ♀ *wakefieldi* does too, and is very successful at it!"

It was extremely interesting to receive this entirely independent confirmation of the conclusions recorded by his friend Canon St. Aubyn Rogers in 1908, *Trans. Ent. Soc. Lond.*, **1908**: 489, pl. XXVII—conclusions referring to *Euxanthe wakefieldi* in the coast region of Brit. E. Africa (Kenya Colony). His friend Sir Guy Marshall had kindly written the following note on the invasion of Natal by this species.

"1933, July 13—With regard to *Euxanthe wakefieldi*, I fear that I was not able to make any observations on this insect in Natal. At the time that I was there the species was extremely rare, only a few specimens having been observed. They were evidently the forerunners of a southern invasion, because I heard afterwards that it became comparatively common. The same thing happened with regard to both *Hamanumida daedalus*, F., and *Metacrenis rosa*, Hewits. I remember Alfred Millar telling me that he could recall the time when *Hamanumida* first appeared in Durban, and was considered quite a rarity. *Metacrenis* began to appear in the 'nineties."

H. V. O'Donel on the nesting association between an Indian bird, *Ploceus megarhynchus*, and the Jungle bee, *Apis indicus*, Fabr.

The President said that his friend Mr. E. C. Stuart Baker, O.B.E., M.B.O.U., had kindly directed his attention to the following interesting addition to these significant associations, many of which are recorded in our *Proceedings*:—

"13 *July*, 1933—This extract may interest you: 1916, *J. Bombay Nat. Hist. Soc.*, **24**: 821—'I send you a photo taken by myself of a hive of the jungle bee, *Apis indicus*, with the nest of the Eastern baya, *Ploceus megar*[*h*]*ynchus*, alongside of it. This is the third instance I have come across.' The note is signed 'H. V. O'Donel, Hasimara P.O., Duara, 22nd June, 1916.' The photo was unfortunately spoilt and could not be reproduced. O'Donel was a good and correct observer. Hasimara is in Behar, North East India."

Dr. H. H. Karny on a Bornean Tettigoniid (Locustid) insect described by R. Shelford as a mimic of a Coccinellid beetle, such as *Caria dilatata*.

The President said that his friend Dr. R. Hanitsch, Ph.D., had kindly directed his attention to Dr. Karny's paper in 1932, *Sborník Ent. Nár. Mus. Praze*, **10**: 110–12, referring to the late R. Shelford's memoir on "Some Mimetic Insects and Spiders from Borneo, etc." (*Proc. Zool. Soc.*, **1902** (2): 230). The Tettigoniid, described below as *Coccinellomima shelfordi*, by Karny, was placed by Shelford as one of six mimics of the common Coccinellid type of pattern and colouring represented by *Caria dilatata*, F., fig. 30 on his plate XXIII, where the mimics were also shown (figs. 31–36).

Dr. Hanitsch had added to his kindness by preparing the following abstract of Dr. Karny's paper.

Coccinellomima shelfordi, Karny.

"Shelford, in *Proc. Zool. Soc.*, 1902, II, p. 235, pl. xxiii, fig. 34, described and figured a curious insect from Sarawak which seemed to mimic a Ladybird, and which he took for a Locustid. He sent it to Brunner for examination who placed it near *Gammarotettix* (subfam. RHAPHIDOPHORINAE). But as *Gammarotettix* is a Nearctic genus, Karny, doubting Brunner's determination, asked Mr. Banks of the Sarawak Museum, to send him the insect. Karny comes to the conclusion that the insect cannot belong to the RHAPHIDOPHORINAE, (1) because it lacks the strongly compressed fastigia of that family, and (2) because its anterior tibiae show large tympana. He therefore places it under the HENICINAE,* a sub-family near the STENOPELMATINAE which, however, possess no tympana.

"The single specimen is apterous and very small, but Karny concludes that it is full-grown on account of its strongly chitinised body. Its sex could not be determined, as the abdominal tergites are so strongly bent downwards as to cover almost entirely the end of the abdomen.

"Dr. Karny has, with Mr. Banks's permission, transferred the specimen to the Hope Dept."

Adaptable Protective Resemblance of an Acridian (Orthoptera) of the genus *Oedipoda* to the rocks of its localities, by J. A. Simes.

The three grasshoppers exhibited were taken last July in the S. of France. They belong to a single common species—*Oedipoda germanica*, Charp.—and they are interesting as showing close colour adaptation to their environment.

One was taken at Agay in the Estérel Mts.—a volcanic tract, some 12 miles long with a maximum depth of about 9 miles, which extends from near St. Raphael on the Riviera to the neighbourhood of La Napoule near Cannes. The prevailing rock is a red porphyry; and the grasshopper from Agay has a coloration which exactly matches the tint of the rock—so closely indeed that some searching was necessary to locate the insect after a short flight. All the insects of this species seen in the Estérel were of this reddish form.

The small volcanic tract of the Estérel is surrounded on the landward side by the foothills of the Alps and their subsidiary chains. The prevailing rock in these hills and ranges is limestone; and the grasshoppers found on this terrain are all coloured grey like the rock. The two specimens exhibited with a piece of the prevalent rock show how closely their coloration corresponds with that of their environment. The insects exhibited come from Draguignan, some 40 km. from Agay; but the grey form is to be met with immediately the red rocks of the Estérel are replaced by the grey limestones of the hinterland.

My impression is that this species of grasshopper is very adaptable in the matter of coloration: and I think I am right in saying that in some parts of the Basses Alpes, *e.g.* near Digne, where the limestone over large areas assumes a brownish tint, the colour of the grasshopper exactly reproduces the tone of the rock. I wish to thank Mr. B. P. Uvarov for kindly naming the species.

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* Not given in Kirby's "Synonymic Catalogue"; probably one of Karny's sub-families.—R. H.

The President said that the specimens exhibited by Mr. Simes were the best instances of adjustable Protective Resemblance that he had seen in any European Acridian. The grasshoppers, *Stauroderus bicolor*, L., which matched the red-brown earth of Heligoland and the sand or grasses of a sand-bank, the Düne, only three-quarters of a mile away, were also good but less striking examples (*III. Int. Ent.-Kongr., Zürich*, 1925 (1926), **2** : 437).

Wednesday, November 15th, 1933.

Professor E. B. Poulton, F.R.S., President, in the Chair.

Election of Fellow.

The following was elected a Fellow of the Society :—H. J. Craufurd Benson, B.Sc., 45, Gordon Place, Kensington, W.8.

Nominations.

The Secretary read the following list of Fellows nominated by the Council for the ensuing year :—

For President : S. A. Neave, O.B.E., M.A., D.Sc.
For Treasurer : Francis Hemming, C.B.E.
For Secretary : A. W. McKenny-Hughes, D.I.C.

For other members of Council :—Prof. W. A. F. Balfour-Browne, F.R.S.E., Sir T. Hudson Beare, B.Sc., F.R.S.E., Prof. G. D. Hale Carpenter, M.B.E., D.M., C. L. Collenette, Brigadier W. H. Evans, C.S.I., C.I.E., D.S.O., K. Jordan, Ph.D., F.R.S., R. W. Lloyd, Miss C. Longfield, Sir Guy A. K. Marshall, C.M.G., D.Sc., F.R.S., Prof. E. B. Poulton, M.A., D.Sc., F.R.S., N. D. Riley, W. H. Thorpe, M.A., Ph.D., V. B. Wigglesworth, M.A., B.Ch., M.D., C. B. Williams, M.A., Sc.D.

Exhibits.

Notes on the Oviposition Habits of Two Hymenopterous Egg-Parasites of *Axiagastus campbelli*, Dist. (PENTATOMIDÆ).

Mr. R. A. Lever said :—Two arrhenotokous genera of Hymenopterous parasites —*Microphanurus painei*, Ferr. (Scelionid), and *Anastatus axiagasti*, Ferr. (Eupelmid) —reared by Tothill and Paine (1) from the egg-clusters of *Axiagastus cambelli* are fairly widely distributed throughout the British Solomon Islands (W. Pacific).

The average number of Pentatomid eggs in a cluster is fourteen. In the case of *Anastatus*, oviposition takes ten to twenty minutes and begins by the female tripping over the surface of the egg with the antennae gently vibrating distad of the scape. After fastidiously selecting an egg, the insect finds a spot in the chorion through which it bores a hole with the ovipositor, a task which occupies some six minutes during which there is only a slight swaying motion of the body, the legs remaining rigid. Following the withdrawal of the ovipositor comes the most interesting phase, comprising a rapid movement backwards so as to bring the head of the insect to the edge of the perforation, through which there issues a drop of fluid which has apparently been excreted during the puncturing. On exposure to the air the outer portion of this globule hardens quickly to form a cone, presumably a respiratory funnel, while the fluid portion is immediately imbibed, after which the insect moves well away from the egg, which may be left for a minute. On her return, she may rest for some seconds before chewing the cone flush with the chorion, an operation which takes some five minutes. This is followed by the actual oviposition, in which the ovipositor is re-inserted into the hole and is noticeably curved while the egg is extruded; this, the final phase, occupies about two minutes.

It was noticed that after thus parasitising a number of eggs, there was a distinct waning of enthusiasm as the whole proceeding seemed subsequently to require much more effort.

In contrast to *Microphanurus*, shortly to be described, a female *Anastatus*, while engaged in egg-laying will at once cease if disturbed by another individual wandering over the same or an adjacent egg. Hence in breeding the latter insect it is necessary to place only one female with each egg-mass.

The subsequent development of the parasitised egg is characteristic: the original china-white colour, as laid by the Pentatomid, changes in the course of a day or so to orange which later turns to a brownish-purple. Sixteen days after being parasitised the Eupelmid emerges, there being no periodic variation in the two sexes. The emergence hole is sub-circular in shape and its edges are only slightly indented.

The much smaller female *Microphanurus*, when about to parasitise an egg, tiptoes delicately over the surface with the relatively long antennae so flexed as to simulate limbs. She generally comes to rest on the substratum on which the egg-cluster is lying, taking up such a position as to be in contact with the outside eggs. The ovipositor is extruded and dragged across the chorion till a *point d'appui* is located, when the egg is laid. The whole operation takes only two minutes on the average; a variation of one and a quarter to three minutes has been noted. This is in striking contrast to *Anastatus*, from which it further differs in the marked disregard it shows to the presence of other individuals in its vicinity, as it is not disturbed even when walked over. Occasionally two may be seen actually fighting, either biting each other's wings or engaging in a brief tussle.

No instance was seen of any mutual assistance being rendered as described by Squire (2) in *Telenomus*. Although two females may oviposit in the same egg at a given moment, more than one parasite has not been reared from one host-egg.

After the withdrawal of the ovipositor it is carefully wiped clean on the chorionic processes before being retracted between the stylet-sheaths. Before leaving to attack another egg there is a final tiptoeing suggestive of a confirmatory inspection of the seat of operations.

Four days after being thus parasitised, the host-egg develops a black meridional band—Tothill (1) describes this as equatorial though it is just below the ring of chorionic processes—and eight days later (*i.e.* twelve days in all after parasitisation) the parasite emerges through a sub-rectangular hole the edges of which are bordered by thin flaps of ruptured chorion.

This parasite was found to be about nine times as numerous as *Anastatus* on Tulagi Island in August 1932, since 60·4 per cent. of the egg-masses were parasitised by *Anastatus* as compared with 6·7 per cent. of the former. In addition, it will successfully sting eggs which are five days old, that is up to two or three days before they are due to hatch.

It is, perhaps, worth recording here that Shang (3) has reared the same two genera of Hymenopterous parasites from the eggs of the Pentatomid *Tessaratoma papillosa* in South China.

(1) Tothill, J. D., 1929, A Reconnaissance Survey of Agricultural Conditions in the British Solomon Islands Protectorate, Fiji.
(2) Squire, F. A., 1932, *Nature*, **129 :** 544.
(3) Shang, C. K., 1931, *Lingnan Sci. J.*, **10 :** 399. (Reference from 1932, *Rev. Appl. Ent.*, **20**, A.)

Some Coleoptera from Windsor Forest.

Mr. H. Donisthorpe exhibited two species of Coleoptera from Windsor Forest, of which the first consisted of a species new to science, which he had found in some numbers in a swan's nest on 6th June, 1933, and which Mr. J. H. Keys had described as *Atheta oloriphila*, and the second was a small *Cis*—*C. quadridentulus*, Perris, new to Britain, which he had taken in a small piece of the " Dryad " fungus in a hollow beech tree on 27th June, 1933. He mentioned that in other years this fungus had been much more plentiful on this tree, and it was here that he had discovered *Dorcatoma serra*, Panz., and other rare species.

The Mechanism of Stretching in the Cuticle of *Rhodnius prolixus*.

Dr. V. B. Wigglesworth said :—*Rhodnius prolixus* will take from six to twelve times its own weight of blood at a single meal in the nymphal stages, and up to three times its own weight as an adult. The abdominal wall must therefore be capable of considerable distension, but the mechanism of stretching is quite different in nymph and adult. In the nymph, the cuticle consists of a thick elastic endocuticle, and a very thin epicuticle which is thrown into stellate folds; during feeding, the endocuticle is stretched, and the folds in the epicuticle are more or less smoothed out. In the adult, the outer part of the endocuticle over most of the abdomen is impregnated with hard material and cannot be stretched; but at the sides of the abdomen there is a longitudinal pleat which can be unfolded during feeding. Further, in the lower wall of this pleat, the endocuticle is entirely soft and the epicuticle excessively folded; consequently this membrane can be enormously stretched.

A full account of the cuticle in *Rhodnius* is published in 1933, *Quart. J. Micr. Sci.*, **76 :** 269–318.

The times of activity of certain British Lepidoptera during the night.

Dr. C. B. Williams exhibited diagrams showing the periods of night at which certain British Lepidoptera were active as indicated by captures at a light trap at Rothamsted Experimental Station during 1933. The light trap was fitted with eight killing bottles which were changed by clockwork at regular intervals during the night. It was thus possible to know at what period each insect captured had entered the trap.

Two species of Hemiptera imported on bananas.

Prof. Hale Carpenter exhibited and made remarks upon the following specimens.

Eurydema f. festivum, L. (Pentatomidae), found upon a bunch of bananas in the museum at Oxford, and exhibited alive. Mr. W. E. China, who had kindly identified the specimen, said that the species had a wide distribution in the Palaearctic region, extending through Middle and South Europe to Kashmir and China, and southwards to North Africa and the Canary Isles. Mr. China had kindly allowed him to exhibit a second species (Reduviidae), taken on bananas at Middlesbrough in May, which had been reported upon as follows by Mr. H. G. Barber, of the U.S. Department of Agriculture, Washington.

" We have several specimens of the same species, unfortunately all females, which have been intercepted at several of our southern ports introduced from Central America in cargoes of bananas. I think it is very likely that your specimen came from the same source, rather than from Jamaica. It undoubtedly belongs to the genus *Repipta* and is very probably a new species."

Wednesday, December 6th, 1933.

Professor E. B. Poulton, F.R.S., President, in the Chair.

The Secretary read for the second time the nominations of the Council for Officers and Council for 1934.

Election of Fellows.

The following were elected Fellows of the Society :—John Arnold Charles Greenwood, 33, South Ridgeway Place, Wimbledon, S.W.19; Miss Cecilia Mirèio Legge, M.A., A.R.C.A., The Manchester Museum, The University, Manchester.

Obituary.

The death of Lieut.-Col. C. G. Nurse, a Special Life Fellow of the Society, was announced.

***Argynnis* (*Brenthis*) *dia*, L., recorded from Britain.**

Prof. Hale Carpenter referred to a specimen of *Argynnis dia*, L., which he had exhibited on October 4th. He had since received corroborative evidence from Mrs. Brodie that the specimen had been actually captured by her husband in 1887 during a walking tour through the New Forest, ending up by Christchurch. The data on Mr. Brodie's label attached to the specimen are " near Christchurch, 27.7.87."

Hibernating *Musca autumnalis*, De G., and *Pollenia rudis*, F.

Prof. Carpenter also exhibited specimens of flies found hibernating in great masses in the Archives Department of the Bodleian Library in October last. Samples were twice obtained, giving the following results.

	Musca autumnalis.	*Pollenia rudis.*
♂	178 = 29%	212 = 72%
♀	424 = 71%	83 = 28%

This observation should be compared with a record by Prof. Poulton (1930, *Proc.*, **5** : 46); in the latter case *M. autumnalis* was almost the only species, *P. rudis* being represented by a single specimen. In this instance the sexes of *M. autumnalis* were : ♂♂ 32, ♀♀ 48; a percentage of 60% females.

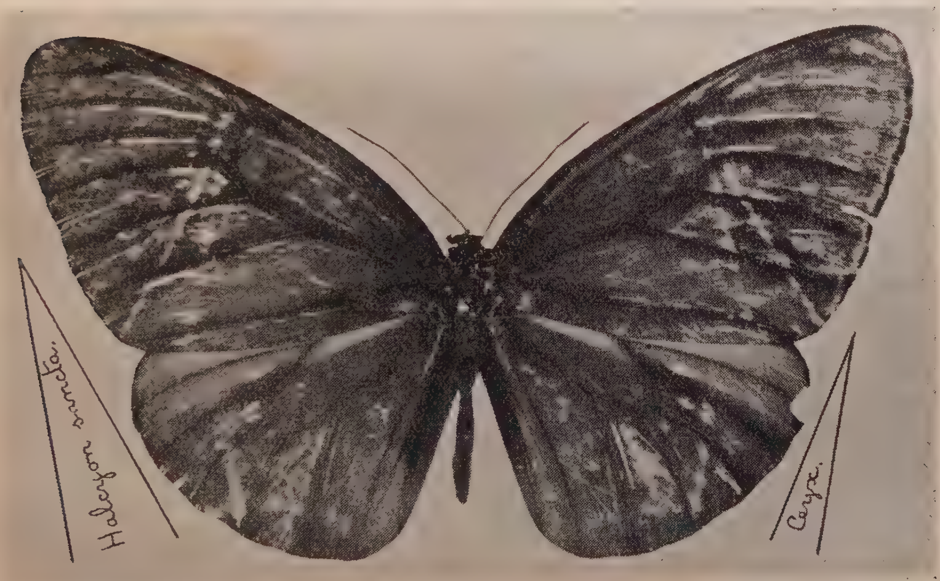
The preponderance of the ♂♂ of *P. rudis* offered strong contrast.

Beak marks on Butterflies' Wings.

Prof. Carpenter also exhibited the following specimens.

1. *Euploea unibrunnea heurippa*, Godm., captured by Mr. R. A. Lever on Santa Isabel Isle, Solomon Islands, in February 1933, and presented by him to the Hope Department of the Oxford University Museum. The specimen showed very clear imprints on all four wings, visible on both surfaces, directed from the anal angle of each fore-wing forwards and inwards, just beyond the end of the cell, and reaching the costa.

A similar mark on each hind-wing showed that the four wings must have been seized together in the position of complete rest. The butterfly was uninjured, but the fore-wings were rubbed between the beak mark and the outer edges.



Euploea unibrunnea heurippa, Godm., showing symmetrical marks probably caused by a bird. Imprints of the bills of two species of Kingfisher from the Solomon Islands are shown for comparison. Natural size.

An endeavour had been made to identify the attacker, and Dr. Percy R. Lowe of the British Museum had kindly given every assistance. Tristram's paper (" Birds from the Solomon Isles," 1879, *Ibis*, **3**) gave two species of Kingfisher inhabiting the Solomon Islands, *Halcyon sancta*, Vig. and Horsf., common, and a new species, *Ceyx gentiana*, Tristr. Imprints made by pressing the bill of a specimen of each of these on soft paper held between the mandibles showed the former to have been the more probable assailant, as the character of the mark showed fair correspondence with the print on the wing. Fruhstorfer (Seitz, **9** : 260) says *heurippa* "is fond of the dense woods and is a sluggish butterfly, which is only rarely flushed, and easy to catch." The accompanying figure is from a photograph kindly made by the Imperial Forestry Institute, Oxford.

2. *Brenthis freija*, Thunb., found by Commander J. J. Walker, R.N., in the Rowland Brown collection at Oxford. The specimen bore data "Abisko (Swed. Lapland) 22.vi.1911. R.R.B."

The inner margin of each hind-wing bore, just in front of the anal angle, a very sharply defined mark directed outwards and slightly forwards, longer on the left side, where it measured 5 mm. The breadth at the margin of the wing was barely 2 mm. The under surface bore a similar mark.

A species of beetle new to Britain.

Mr. DONISTHORPE exhibited a specimen of *Tychus ibericus*, Motsch. (PSELAPHIDAE), a beetle new to Britain which was taken by him at the roots of a stump in a willow swamp in Windsor Forest, on 20th May, 1933. He pointed out that *T. ibericus* had been wrongly recorded as a British species in 1847, from a colour variety of the common *T. niger*, Pk., taken by Wollaston in the south of England.

He also exhibited a ♂ and ♀ from Rye's collection (given to Rye by Wollaston) lent him by Mr. Midgley of the Chadwick Museum, Bolton, and pointed out how *ibericus* differs from *niger* and its variety in the secondary ♂ characters, etc.

An aberration of *Ornithoptera victoriae rubianus*.

Mr. A. DICKSEE exhibited an extraordinary aberration of *Ornithoptera victoriae rubianus*, Roths., from Ranonga, Solomon Islands. He stated that in the few male specimens known the normal colouring of the front wing was a green basal patch extending about a third across the wing, with two green spots near the apex. In one or two specimens there was a third spot below these two; and in one or two a third spot above. In one specimen all four spots were present, and in another there was one spot only.

In the aberration exhibited the green extended over the whole wing, leaving only a black border varying from 5 mm. to 10 mm. wide.

The females also vary a great deal as was shown by the two specimens exhibited. It was considered very strange that this race should be so variable when all the remaining races from the other islands appear to be constant.

Fresh observations by Capt. C. R. S. Pitman, D.S.O., M.C., on the migratory flight of the Nymphaline butterfly *Cymothoe caenis*, Drury, in S.W. Uganda.

The PRESIDENT exhibited 8 male and 2 female specimens of the migrating butterflies recorded by his friend Capt. Pitman in the following extract from a letter written at Mbarara. The two females were male-like. Many other forms of female had been described in previous migrations of *C. caenis* in Uganda.*

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* 1928, *Proc. Ent. Soc. London*, **3**: 70–72, 88, where references to the climatic conditions are to be found. See also Miss Vinall's account of the larva and its food-plant in 1930, *Proc.*, **5** : 45, 92, 93.

"1933, *Oct.* 19.—Just a hasty line to forward you some butterflies which were evidently on passage to-day through Mbarara in S.W. Uganda. It has been very dry for a long time, and this a.m. at 10.30 and subsequently at intervals till 3.0 p.m. we have had terrific rain from the W. and S.W. After the rain, trees and hedges and shrubs throughout the station were absolutely covered with these butterflies. I am sorry that I cannot be more explicit, but even these meagre details will probably be interesting."

The Danaine butterfly *Tirumala petiverana*, Dbl.-Hew., assembling for the night on leafless trees at Kilossa, T.T., E. Africa.

The President said that his friend Mr. C. J. Wainwright had informed him of observations made in 1918 by Mr. H. G. Quilter of the Angel Hotel, North Walsham, Norfolk. He had sent specimens of *Amaurus niavius dominicanus*, Trim., *A. ochlea*, Boisd., and *T. petiverana* to Mr. Quilter, who considered that the last-named was the butterfly he had seen. This was extremely interesting as, so far as he was aware, it was the first recorded observation of sleeping assemblage in this species.

Mr. Quilter had kindly sent him the following interesting account of his experience :—

"After serving in the R.A.S.C. as first-class Warrant Officer on the Somme I was, on returning to England in 1917, sent to East Africa and stationed for a year and a half on Supply Depot at Kilossa on the main line to Tabora. Kilossa being rather notorious for fever we naturally made our living quarters on the higher ground north of the railway, and near a small Military Cemetery which lay at the foot of the hills. It was here that I noticed, an hour after sunrise and an hour before sunset, hundreds upon hundreds of black, light-blue-spotted butterflies flying away and returning, much as the crows do in this country. Observing the direction of their morning and evening flights I went, accompanied by a friend, to the Military Cemetery close to which we found two trees apparently in full leaf while everything around was dried-up and leafless. These on closer inspection proved to be one mass of the black, blue-spotted butterflies, clinging with wings closed in readiness for the night's rest. I had no chance of taking specimens for preservation under those oversea war conditions, but I shall always remember the beautiful insects and the wonderful sight they gave me. Of the three specimens sent *petiverana* is the one which accords with my memory of the butterflies.

H. G. Quilter, S.S.M., late R.A.S.C."

Mr. Quilter added that although the butterflies showed a black ground-colour as they flew in the strong light, on the trees with closed wings they appeared of "a dull brown or a shade lighter than black, through which you could see the blue spots very faintly."

Evidence of insect-food-preference in Fijian and Oriental birds, by Mr. H. W. Simmonds, F.R.E.S.

The President said that his friend Mr. Simmonds had written, 4 June, 1933, in reference to the discussion of 7 Dec., 1932, recorded in our *Proceedings* :—

"The Coconut Moth, *Levuana viridescens* (Zygaenidae), was for 60 years a major pest in Fiji, actually turning the trees brown like fire. It was the subject of intensive study, and only once was a bird observed apparently to take a larva; yet we have plenty of insectivorous birds. The Zygaenid, *Artona catoxantha*, in Malaya also becomes equally numerous at times, but does not lead to any concentration of birds. Yet even protected abundant species such as *Oecophylla smaragdina*, the Green (or Red) Tree-Ant may have special bird enemies, as in this case a Woodpecker feeds largely upon it, as I have learned from the Curator of the Raffles Museum, Singapore. Again, the Indian Bulbul will attack the wasp *Polistes*, but I have never seen any other bird do so."

Notes on the British species of the genus *Microsania*, Zett. Diptera (Platypezidae).

Mr. J. E. Collin said that in June 1930 when collecting at Blakeney Point (Norfolk) I swept up some specimens of a small Dipteron which were at once recognised as belonging to the above genus then unrecorded as British. In accordance with our knowledge of this genus at that time they were placed in my collection as *Microsania stigmaticalis*, Zett., and were exhibited by me at a meeting of the Entomological Club at Eastbourne in 1931 under that name. This year Mons. A. Collart of Brussels as a result of studying a large number of specimens of this genus captured in Belgium, under the peculiar circumstances noted later, discovered that the three names in the Palaearctic "List" represented good and distinct species, and that they all occurred in Belgium. He returned a pair of my specimens which I sent him at his request as *Microsania pallipes*, Mg., and forwarded a copy of his excellent paper on the genus (1933; *Bull. Mus. Hist. nat. Belg.*, **9**). An examination of my remaining specimens (1 ♂, 2 ♀♀) proved that they included another pair of *M. pallipes*, Mg., and a female of *M. pectinipennis*, Mg. There is also a male of *pectinipennis* in the British Museum collection taken by Dr. F. W. Edwards on the window of a fowl-house at Welwyn (Herts) on 10th July, 1926. I can thus definitely record these two species as British, and there is every reason to believe that the third species (*stigmaticalis*, Zett.) will be found in Britain, if sought when conditions are similar to those under which all three species were found in Belgium.

Until 1921 specimens of *Microsania* were considered great rarieties; but in that year Mons. G. Severin discovered that in various parts of Belgium males could be obtained in hundreds in the immediate vicinity of heath fires, the insects flying even in the smoke and settling on the still hot ground and burnt herbage; in one case they were said to be so numerous as to hinder the work of those engaged in trying to extinguish the conflagration. My own specimens were not obtained under these conditions, but there was a peculiarity about their capture which might deserve to be placed on record. On the day of capture a short sharp shower was followed by a hot sunny period, the marram-grass which I was sweeping dried up quickly after the shower, and I was able to sweep almost as soon as the sun appeared; my first two sweeps produced five specimens of *Microsania* after which not a single specimen could be found.

The attraction of heath fires for some other insects is well known, for instance Coleoptera of the genus *Melanophila* are found under such conditions, but the only other case in the Diptera known to me is that of a rare Empid *Hormopeza obliterata*, Zett., recorded by me in 1918, *Ent. Mon. Mag.*, **54**: 278.

The three species of *Microsania* may be distinguished by the following characters, which are further supported by differences in the male genitalia.

1(2). With a small apical spur to hind tibiae. Costal ciliation more distinct *pectinipennis*, Mg.
2(1). No apical spur to hind tibiae. Costal ciliation less distinct.
3(4). Pubescence blackish, pterostigma blackish . . . . . *stigmaticalis*, Zett.
4(3). Pubescence yellowish, pterostigma brown . . . . *pallipes*, Mg.

Papers.

The following papers were read :

(1) " Two Collembola-collecting Crabronids in Trinidad," by J. G. Myers.

(2) " Contributions to a knowledge of S. African marine Clunionine Chironomids," by A. J. Hesse.

(3) " On the Brush Organs of the male Ermine Moth, *Spilosoma menthastri*," by H. Eltringham.

(4) " The metasternum and pleuron of Heteroptera," by Mrs. M. D. H. Brindley.

(5) " Studies on Ethiopian Simuliidae, Parts 3 and 4," by E. G. Gibbins.

(6) " A study of the genus *Actinoptera*, Rond., in the Ethiopian region," by H. K. Munro.

ANNUAL MEETING.

Wednesday, January 17th, 1934.

Professor E. B. Poulton, F.R.S., President, in the Chair.

Dr. S. A. Neave, Secretary, read the names of the Fellows nominated as Officers and Council for the ensuing year, and announced that they had been duly elected in accordance with the Bye-Laws.

He then read the following :—

Report of the Council, 1933.

In the Centenary year of the Society, perhaps the most notable in its history, the Council is fortunate in being able to report satisfactory progress in its various activities.

A full account of the Centenary celebrations themselves, which took place from 3rd to 5th May, has already appeared in the *Proceedings,* and it is unnecessary to describe them further here. Allusion must, however, be made to the profound gratification with which it was learnt that our Patron, His Majesty the King, had been graciously pleased to command that the Society shall henceforth be known as the Royal Entomological Society of London.

The plans for the arrangements connected with the celebrations were entrusted to a special sub-committee of the Council consisting of Professor E. B. Poulton, Dr. H. Eltringham, Mr. Francis Hemming, Dr. K. Jordan, Mr. R. W. Lloyd, Sir Guy Marshall and Dr. S. A. Neave.

" The Centenary History of the Entomological Society of London," prepared by Dr. S. A. Neave, was published on 24th April, shortly before the celebrations themselves, and copies of it were distributed to all Fellows, as well as to the Delegates.

During the summer of 1933 the 75th anniversary of the foundation of the Swiss Entomological Society was celebrated at Zurich, and the Society was represented on that occasion by Dr. K. Jordan, F.R.S.

During the year the Council have set up a Committee on Generic Nomenclature, and on their recommendation the Council have decided to publish a work entitled " The Generic Names of British Insects." This will be issued in parts, and copies will be distributed free to Fellows, the cost being defrayed from the Meldola bequest.

The close of the present year marks also the end of the distinguished period during which Dr. S. A. Neave has acted as Secretary to the Society. The fifteen years that he has held this office have witnessed a remarkable transformation in the affairs of the Society, and to him belongs a large measure of the credit for these many-sided developments.

Increasing pressure of other work has forced Dr. Neave to tender his resignation, which the Council have only accepted with the greatest regret. They desire to take this opportunity of expressing their warm appreciation of the many services that Dr. NEAVE has rendered to the Society, and they are happy to think that, by consenting to serve as President for the coming year, Dr. NEAVE will continue for some time to take an active part in the direction of the Society's affairs. He has consented also to retain for the present the editorship of *Stylops*.

The Council offer a hearty welcome also to Mr. A. W. McKENNY-HUGHES, who is succeeding Dr. NEAVE as Secretary.

Since the last Annual Meeting, one Special Life Fellow, Lieut.-Colonel C. G. NURSE, and the following 5 (15) Fellows have died, or their deaths have been ascertained (the numbers in brackets in this and the following paragraphs indicating the corresponding ones for the previous year) :—T. A. COWARD, A. DRUITT, E. J. GODFREY, J. J. F.-X. KING and C. F. C. RILEY.

The following 6 (11) Fellows have resigned :—H. L. EARL, H. T. FERNALD, H. L. GAUNTLETT, G. K. P. HEBBERT, W. F. SCHLUPP and A. TOWNSEND.

The following 6 (19) have been removed from the List of Fellows in accordance with the Bye-Laws, Chapter XVI, Section 3 :—M. F. BLISS, Prof. C. BOLIVAR Y PIELTAIN, A. N. BURNS, Miss A. CASTLE, T. H. L. GROSVENOR and G. LYELL.

During the year 3 Special Life Fellows, W. G. SHELDON, Commander J. J. WALKER, and the Rev. GEORGE WHEELER, and 40 Ordinary Fellows have been elected. This more than compensates for the losses during the year, and the total result is a substantial increase in the number of Fellows. The Society now consists of 12 Honorary Fellows, 7 Special Life Fellows and 676 Ordinary Fellows.

The meetings have been exceptionally well attended, the average number of Fellows and Visitors at each being 84, an increase of 23 over the previous year.

The two Parts of the *Transactions* for 1933 (Volume LXXXI) were published on 30th June and 30th December respectively. They comprise 15 papers by 16 authors. Of these, 3 deal with Hymenoptera, 2 with Lepidoptera, 2 with Coleoptera, 2 with Diptera, 1 with Rhynchota, 1 with Thysanoptera, 2 with Insect Teratology, 2 with General Entomology and 1 with Migration of Insects. The volume consists of 234 pages, and is illustrated by 22 plates. It is somewhat smaller than the exceptional volumes for the two previous years, this being mainly due to a considerable reduction in the financial assistance from outside sources received towards the cost of its production, and also to the fact that from the funds allotted to it for this year was transferred a sufficient sum to meet the cost of publication in the *Proceedings* of Dr. McAtee's reply to the criticisms of his work published in that journal for 1932. The India Office contributed £30 towards the cost of the plates of Mr. SHARGA's paper. Dr. COCKAYNE paid the cost of the plate illustrating the paper by himself and Mr. C. N. HAWKINS; and Mr. DESHPANDE and Mr. HAWKINS £5 each towards the cost of the plates in their respective papers.

Partly for the reason given above, but largely because it contains a full account of the Centenary meeting and celebrations, the volume of the *Proceedings* will, on the other hand, be the largest on record. It will consist of about 180 pages, illustrated by 2 plates and some text-figures. The cost of the plates and of the printing of the Addresses presented at the Centenary meeting has been defrayed from the Centenary Fund, and Professor E. B. POULTON made a donation of £5 towards the extra cost of the discussion on "Protective Adaptation."

The second volume of *Stylops* consists of 272 pages and is illustrated by 5 plates and numerous text-figures. It comprises 62 papers by 51 authors. Of these, 21 deal with Coleoptera, 12 with Hymenoptera, 8 with Lepidoptera, 7 with Diptera, 5 with Hemiptera, 3 with Odonata, 2 with Thysanoptera, 1 with Orthoptera, 1 with Trichoptera, 1 with Psocoptera, and 1 with Thysanura.

Professor E. B. POULTON defrayed the entire cost of the two plates illustrating his article on *Charaxes ansorgei*, Mr. J. F. MARSHALL and Dr. F. MARSH the cost of the blocks of the plates illustrating their papers, and Mr. G. H. CORBETT made a donation towards the cost of the illustrations of his paper.

Much of the detailed work of the Society's business has been carried out by a Finance and Housing Committee, under the Chairmanship of Mr. R. W. LLOYD, a Publication Committee under that of Mr. N. D. RILEY, and a Library Committee under that of Dr. K. JORDAN, and the thanks of the Council are again due to those Fellows who have served on these Committees.

The Library, both as regards its organisation and the growth of its contents, has continued to make good progress during the year.

The most important single addition is that of a complete copy of Cyrilli : *Entomologiae Neapolitanae*, 1787, generously presented by Mr. R. W. LLOYD. This contains 4 plates with their explanations that are additional to the 8 found in most copies. Another interesting accession is a copy of the *Transactions of the Entomological Society of Kiev*, this being the only recorded copy in this country.

Considerable progress has been made with the arranging and cataloguing of the collection of separata, 7,200 having now been dealt with. The use of the Library by Fellows continues to grow, and there is a satisfactory increase in the number that have borrowed books, viz. :—382 (348). In addition several books not in the Library were obtained for Fellows from the National Central Library, and some books were sent on loan to that organisation in return.

The Honorary Secretary of the Committee for the Protection of British Insects reports that its sub-committee and that of the Committee of Management for Wicken Fen met on the Fen in May. The question of summer-cutting portions of the Sedge Fen, as recommended by the representatives of the Society, was discussed and each portion inspected. Certain plots were selected for experimental cutting, parts of each being left as controls. It was decided that one side only of the new droves should be mown in the summer instead of the whole width and that the cutting of the main drove should be deferred until the autumn. The total acreage selected for cutting in 1933 amounts to approximately 16 acres.

The recommendations of the two sub-committees were duly approved by the Committee of Management at the annual meeting held at Cambridge in July.

The cutting has been carried out and a record will be kept of the date on which the cutting took place. It is hoped that this will, in the future, provide data that should be of assistance in deciding how best to treat each plot, taking into consideration the insects and plants inhabiting it. A wet or dry summer following the cutting has a considerable effect on the second growth. Though the area cut this year is small, your Committee feel that a start has been made at last. They hope that, as time goes on, and as the beneficial effects of summer-cutting become apparent, it will be possible to cut larger and larger areas each season. It was arranged that the two sub-committees should meet on the Fen each spring to inspect the effect of the previous year's cutting and to make further recommendations.

Your Committee again subscribed towards the protection of *Maculinea arion*, L., in N. Cornwall. The season was favourable to this butterfly, and it was seen in increased numbers in the reserved area. *Lycaena dispar batavus*, Oberth., appeared in large numbers both at Wood Walton Fen and Wicken Fen. No attack by parasites was noticed in either locality. No specimens bred in captivity were liberated, and the butterfly seems to be able at the present time to survive without this assistance, provided that the environment is maintained in a satisfactory condition. *Lycaena dispar rutilus*, Werneb., was not reported from Norfolk this season, but it does not follow that it has disappeared.

Your Committee was able to be of assistance in helping to protect a rare Dragonfly in a locality in Surrey in which it had not previously been recorded.

In conclusion, it may be reported that your Committee is maintaining close touch with such organisations as the National Trust and the Society for the Promotion of Nature Reserves, which are interested in the preservation of the Insect fauna of the country.

The Report was adopted on the motion of Fleet-Paymaster T. BAINBRIGGE FLETCHER, seconded by Mr. R. W. LLOYD.

Mr. FRANCIS HEMMING, Treasurer, then read the following :—

Treasurer's Report.

In my report for last year, I observed that in times of general economic depression like the present, institutions such as ours are particularly vulnerable, depending, as they do, for the greater part of their income on subscriptions and on the sale of publications.

It is therefore satisfactory to be able to record this year a substantial improvement in the position as regards subscriptions. The increase under the head "admission fees" is also very satisfactory.

The income from the sale of the Society's *Transactions* and *Proceedings* shows, however, a further shrinkage. This is due in part to the fact that in the current year the Society has not received such substantial contributions towards the cost of its publications as in previous years, and in part to the reduction in the contribution from the General Fund necessitated by the general financial position. The publications this year have, therefore, been considerably lower-priced than usual, with the result that though the volume of orders received shows but little decline, the receipts from sales show a considerable drop. If the present indications of a return to general prosperity are maintained, it should be possible gradually to increase the annual contribution from the General Fund towards the cost of the publications and thus in time to secure an increased income from sales.

Turning to the expenditure side of the accounts, it will be seen that as a result of economical administration, the house and office expenses, despite their natural tendency to rise, are at substantially the same level as in previous years. Such small increase as has occurred is due in part to an increase in the annual transfer from the General Fund to the Repairs to Premises Fund, and in part to miscellaneous items of expenditure indirectly attributable to the centenary.

The cost of the centenary celebrations has been almost entirely defrayed from the Centenary Fund. The receipts of the Fund have been derived from donations, from the sale of the Centenary History, and from bank interest. Since the opening of the fund in 1932, these have amounted in all to the sum of £578 15*s.* 8*d.*, which includes a small grant from the General Fund amounting to £16 10*s.* 6*d.* From the Fund there has been met the cost of the actual celebrations and of the printing of the Centenary History of the Society and of the portion of the annual *Proceedings* that record the celebrations.

The position as regards *Stylops* differs but little from that of a year ago. The net expenditure from the General Fund in the current year was some £30 less than in 1932, but this was due to economies effected in the production of the journal, the receipts from sales being almost unchanged. In view of the difficulties of the time at which *Stylops* was launched, the present position is, I think, as satisfactory as could be expected.

The accounts for the year 1933 show an excess of income over expenditure of £151 5*s.* 7*d.* as compared with one of £52 19*s.* 7*d.* in the year 1932. Turning to the balance sheet, it will be seen that the excess of liabilities over assets, which amounted to £119 3*s.* 7*d.* on 31st December, 1932, has this year been transformed into an excess of assets over liabilities amounting to £32 2*s.* 0*d.*

On the whole, therefore, from the financial point of view, the year 1933 may be regarded as having been one of sound, if modest, progress. The financial difficulties that have beset the Society throughout the period that I have held the office of Treasurer, have at length been overcome, and, given a reasonable degree of recovery in the general financial situation, it is permissible to hope that the scene is now set for further developments in the activities of the Society.

The Report and Accounts were adopted on the motion of Prof. G. D. HALE CARPENTER, seconded by Dr. E. A. COCKAYNE.

The PRESIDENT then read his Address, and at its conclusion a vote of thanks to him, coupled with the request that it might be printed in the *Proceedings*, was moved by Dr. S. A. NEAVE, and carried unanimously.

A vote of thanks to the Officers for their services during the year was then passed on the motion of Dr. H. ELTRINGHAM, seconded by Mr. N. D. RILEY, and carried unanimously. Dr. S. A. NEAVE and Mr. FRANCIS HEMMING briefly replied.

THE ROYAL ENTOMOLOGICAL SOCIETY OF LONDON.

TREASURER'S STATEMENT OF INCOME AND EXPENDITURE for the Year ended December 31st, 1933.

(Presented at the Annual Meeting, 17th January, 1934.)

GENERAL FUND.

INCOME.

1932. £	£		£	s.	d.	£	s.	d.
		To subscriptions—						
	43	received in advance for 1933 ...	44	1	9			
	1,158	received in 1933 for 1933	1,182	9	9			
	40	received in 1933 for previous years	73	10	0			
	1,241		1,300	1	6			
	135	*Less* subscriptions in arrear at 31st December, 1932	50	0	0			
	1,106		1,250	1	6			
	50	*Add* subscriptions in arrear at 31st December, 1933—valued at ...	75	0	0			
1,156						1,325	1	6
44		,, admission fees				122	15	5
		,, publications—						
	480	sales	364	3	11			
	179	donations towards cost	56	17	6			
659						421	1	5
3		,, interest on deposit at bank				2	5	0
55		,, dividends on investments (gross) ...				55	2	8
250		,, rents from sub-tenants				250	0	0
233		,, contributions by sub-tenants towards house expenses				230	3	0
14		,, miscellaneous				3	12	0
£2,414						£2,410	1	0

EXPENDITURE.

1932. £	£			£	s.	d.	£	s.	d.	£	s.	d.
			By House expenses—									
	222		wages				235	10	3			
	94		fuel, gas and electric light				94	5	6			
	35		insurance and water				34	9	10			
	50		repairs fund—transfer				80	0	0			
	45		miscellaneous				21	2	11			
446										465	8	6
			,, office—									
	615		salaries				637	14	1			
	67		printing and stationery				54	15	5			
	26		postages				46	7	9			
	21		audit fee				21	0	0			
		25	superannuation ...	25	5	6						
		10	*less* employees' contributions	11	2	0						
	15						14	3	6			
	—		furniture and equipment				3	4	6			
	15		miscellaneous				30	0	11			
759										807	6	2
			,, library—									
	168		library fund transfer				100	16	5			
	—		furniture				38	18	0			
168										139	14	5
706			,, cost of publications							584	15	3
	355		,, "Stylops" cost of printing, &c. ...				317	1	4			
		90	*less* subscriptions ...	92	10	9						
	98	8	donations ...	4	10	0						
257							97	0	9	220	0	7
25			,, donation to Zoological Record ...							25	0	0
			,, contribution to Centenary fund ...							16	10	6
53			,, excess of income over expenditure carried to Balance Sheet							151	5	7
£2,414										£2,410	1	0

BALANCE SHEET, December 31st, 1933.

REPAIRS TO PREMISES FUND.

LIABILITIES.	£ s. d.	£ s. d.	ASSETS.	£ s. d.
To excess of assets over liabilities at 31st December, 1932	54 10 0		By cash at Bank	114 16 10
Add excess of income over expenditure for year to date	60 6 10			
		114 16 10		
		£114 16 10		£114 16 10

HOUSING FUND.

	£ s. d.		£ s. d.	£ s. d.
To excess of assets over liabilities at 31st December, 1932 ...	£13,417 3 4	By freehold premises, 41, Queen's Gate, at cost	6,250 0 0	
		,, cost of New Meeting Room Scheme	7,167 3 4	
				13,417 3 4
	£13,417 3 4			£13,417 3 4

COMPOUNDING FUND.

	£ s. d.		£ s. d.	£ s. d.
To excess of assets over liabilities at 31st December, 1932 (representing estimated liability of Fund at that date—subject to revision quinquennially.)	1,185 0 0	By £1,354 2*s.* 2*d.* 2½% Consols valued at 6th March, 1929	737 19 9	
		,, £532 3*s.* 5*d.* 4% Consols valued at 6th March, 1929 ... (value at date £1,583 8*s.* 8*d.*)	447 0 3	
				1,185 0 0
	£1,185 0 0			£1,185 0 0

CENTENARY FUND.

	£ s. d.	£ s. d.	£ s. d.		£ s. d.
To excess of assets over liabilities at 31st December, 1932		264 8 7		By unsold copies of History of Society transferred to General Fund (not valued)	—
Add receipts for year to date		314 7 1			
		578 15 8			
Less expenditure:					
Centenary celebrations	243 15 7				
History of Society	245 0 1				
estimated cost of Centenary portion of *Proceedings*	90 0 0				
		578 15 8			
			—		
			£ —		£ —

GENERAL RESERVE.

	£ s. d.		£ s. d.
To excess of assets over liabilities as at 31st December, 1932	450 0 0	By cash at Bank on deposit	450 0 0
	£450 0 0		£450 0 0

(Signed) FRANCIS HEMMING, *Treasurer.*

We have examined the above Balance Sheets and Accounts with the Books and Vouchers of the Society and certify them to be correct. The Solicitors have certified to us that they hold the deeds of 41, Queen's Gate for safe custody on behalf of the Society, and we have verified the Investments and Bank Balances.

23, *Queen Victoria Street,*
London, E.C. 4.
10*th January*, 1934.

(Signed) W. B. KEEN & Co., *Chartered Accountants.*

THE PRESIDENT'S ADDRESS.

LADIES AND GENTLEMEN,

During the past year our Society has lost by death six Fellows, one of whom, Lt.-Col. C. G. Nurse, was a Special Life Fellow.

The loss of T. A. COWARD, F.Z.S., is a great blow to British Natural History. His interests as a field naturalist were unusually wide and no lover of animals appealed to him in vain. I well remember the great assistance he gave to me in the study of " British Insectivorous Bats and their Prey " (*Proc. Zool. Soc.*, **1929 :** 277), a paper in which five of his publications are quoted; and ever since its appearance he has, from time to time, sent me additional notes for a future publication on the same subject. Although Coward had been one of our Fellows for 20 years, his main interest was Vertebrate Zoology. His " Birds of the British Isles and their Eggs," 1919, has been described as " a household word among amateur ornithologists, which has done more to promote and encourage the intelligent study of birds in Great Britain than any other work of our time." *

ALAN DRUITT, a Fellow of the Society from 1924, was keenly interested in British Lepidoptera, especially the LYCAENIDAE and the Irish race of *Epinephele jurtina.* He also collected tropical species during a trip up the River Amazon. Druitt was one of the first twelve members of the Hampshire Entomological Club and took a prominent part in its expansion into the flourishing Entomological Society of the South of England over which he presided in 1928 and 1932. He had delivered his Presidential Address on 28 Jan. 1933, only twelve days before his sudden death due to thrombosis. This brief notice of Druitt's entomological interests I owe to the kind help of Mr. W. Parkinson Curtis, F.R.E.S.

E. J. GODFREY, elected a Fellow in 1914, became a science master at Suan Kularb College, Bangkok, Siam, in 1908, and at once devoted all his available time to the careful study of the Rhopalocera, making eventually the most complete collection ever known from that country and publishing valuable lists of species and subspecies in the *J. Nat. Hist. Soc. Siam.* This Siamese Society, founded in 1913, owes much to his influence and, for some years, to his care in editing its publications. A more complete account of his entomological work will be found in the Obituary Notice printed in the *Entomologist* for September 1933, to which I am indebted for this slight record of a keen follower of our Science whose work will endure.

We have also to regret the loss of J. J. F.-X. KING, a Fellow since 1889 and well known as an energetic and successful collector of British insects, especially

* *Nature*, **131 : 297, 4 Mar. 1933.**

STATEMENT OF INCOME AND EXPENDITURE for the Year ended December 31st, 1933.

WESTWOOD BEQUEST FUND.

1932. £	INCOME.	£ s. d.	1932. £	EXPENDITURE.	£ s. d.
7	To interest on Birmingham Stock	7 3 8	7	By income for the year, carried to Balance Sheet	7 3 8

HAMILTON DRUCE BEQUEST FUND.

1932. £		£ s. d.	1932. £		£ s. d.
44	To interest on New Zealand Stock	43 16 6	44	By transfer to Library Fund	43 16 6

LIBRARY FUND.

1932. £	1932. £		£ s. d.	£ s. d.
	44	To transfer from Hamilton Druce Bequest Fund—interest on New Zealand Stock	43 16 6	
	168	,, transfer from General Fund	100 16 5	
		,, donation by R. W. Lloyd, Esq.	8 0 0	
213	1	,, miscellaneous	—	152 12 11
38		,, excess of expenditure over income, carried to Balance Sheet		44 5 10
£251				£196 18 9

1932. £	1932. £		£ s. d.	£ s. d.
	209	By expenditure on books	119 4 0	
251	42	,, binding, repairs and insurance	77 14 9	196 18 9
£251				£196 18 9

REPAIRS TO PREMISES FUND.

1932. £		£ s. d.	1932. £		£ s. d.
50	To transfer from General Fund	80 0 0	7	By expenditure on repairs	19 13 2
			43	,, excess of income over expenditure, carried to Balance Sheet	60 6 10
£50		£80 0 0	£50		£80 0 0

CENTENARY FUND.

1932. £		£ s. d.	£ s. d.	1932. £		£ s. d.
264	To donations	288 12 7		264	By receipts for year carried to Balance Sheet	314 7 1
	,, interest on deposit	1 3 0				
	,, sales of History of Society	8 1 0				
	,, contribution by General Fund	16 10 6	314 7 1			
£264			£314 7 1	£264		£314 7 1

BALANCE SHEET, December 31st, 1933.

GENERAL FUND.

LIABILITIES.

	£	s.	d.	£	s.	d.
To sundry creditors	405	4	3			
,, subscriptions in advance	48	6	7			
				453	10	10
,, excess of assets over liabilities:						
excess of income over expenditure for year to date	151	5	7			
Less excess of liabilities over assets at 31st December, 1932	119	3	7			
				32	2	0
				£485	12	10

ASSETS.

	£	s.	d.	£	s.	d.
By sundry debtors—						
subscriptions valued at	75	0	0			
admission fees	18	18	0			
publication sales	127	10	2			
rent and contributions to house expenses	131	9	10			
sundries	39	10	2			
				392	8	2
,, payments in advance				15	16	10
,, unsold copies of publications	(Not valued)			—		
,, cash: at Bank	33	11	10			
in hand	43	16	0			
				77	7	10
				£485	12	10

WESTWOOD BEQUEST FUND.

	£	s.	d.	£	s.	d.
To excess of assets over liabilities at 31st December, 1932	257	3	8			
Add income from investment for year to date ...	7	3	8			
				264	7	4
				£264	7	4

	£	s.	d.
By £239 12*s.* 4*d.* Birmingham Corporation 3% Stock 1947 at cost ... ... (value at date £203 13*s.* 4*d.*)	250	0	0
,, cash at Bank	14	7	4
	£264	7	4

HAMILTON DRUCE BEQUEST FUND.

	£	s.	d.
To excess of assets over liabilities at 31st December, 1932	1,000	0	0
	£1,000	0	0

	£	s.	d.
By £1,095 15*s.* 6*d.* New Zealand 4% Stock 1943/1963 at cost ... ... (value at date £1,117 13*s.* 9*d.*)	1,000	0	0
	£1,000	0	0

LIBRARY FUND.

	£	s.	d.
To sundry creditors		16	6
,, cash at Bank overdrawn	28	2	3
	£28	18	9

	£	s.	d.	£	s.	d.
By library furniture and fittings	(Not valued)					
,, library books (valued at £10,000)						
,, excess of liabilities over assets:						
excess of expenditure over income for year to date	44	5	10			
Less excess of assets over liabilities at 31st December, 1932	15	7	1			
				28	18	9
				£28	18	9

from the Scottish Highlands, the Lake District and Ireland. He presented all his collections of insects to Glasgow University, where he held, until recently, the Professorship of Art. He will be greatly missed by his many friends.

Lt.-Col. C. G. Nurse, elected a Special Life Fellow in 1932, became a Fellow in 1895. He was a keen entomologist who began to collect butterflies and moths when a boy at school, Indian Lepidoptera in 1892 and Indian Hymenoptera in 1897, contributing many papers on the latter Order to the Bombay Natural History Society and articles on Diptera and Neuroptera to the *Entomologist.* He also wrote on the birds of India and discovered a new snake at Aden. A large number of species of Hymenoptera, Lepidoptera Heterocera, and Diptera were described from his Indian and Arabian collections. He also discovered two Hymenoptera, two Diptera, and one Neuropteron new to science in Britain. In 1920 he presented his whole collection of Indian Hymenoptera, over 10,000 specimens, to the British Museum. The material from which this brief summary of Col. Nurse's fruitful entomological career has been written was published in *The Times* of 7 November, 1933.

I have been unable at present to obtain a record of the entomological interests of C. F. C. Riley, of the Dept. of Zoology, University of Manitoba, Winnipeg, Canada, who became a Fellow in 1924.

I will ask you to rise for a few moments in memory of our fellow-workers in Entomological Science.

The great events of the past year, the greatest in the history of our Society, the Centenary and the gracious consent of His Majesty to the dignity then conferred upon us and signalised in our title, are fully recorded with grateful thanks, in the *Proceedings* of 6 December, 1933. It will be, I am sure, a special gratification to the Fellows that Dr. S. A. Neave, who laboured so hard and so successfully for the Centenary Celebrations, should be the President elected in the first year of our second century.

The discussion on the " Protective Adaptations of animals—especially insects " which was held on 7 December, 1932, was recorded in 1933, *Proceedings*, **8** : 25–96, published on 21 April, 1933, and may therefore be treated as a feature of the past year. Extracts from letters received from three Fellows are of much interest in relation to the subject, and are therefore printed below where they will be not far removed from the report of the discussion.*

Mr. H. B. Cott wrote on 13 February, 1933 :—

" I have now got well on with the food of *Hyla arborea* in Gran Canaria and Gomera. This paper will be supplementary to the Zambesi Frog report. Again I have found that aposematic prey are scarce.

" Just before the term started, I concluded a series of experiments with toads to prove whether or not these creatures can learn to recognise distasteful insects. A series of thirty-three toads were placed, severally, upon the landing-stage of an active bee-hive, and allowed to feed on the bees. The toads were starved for a week before the experiment, and given no other food during its progress. Each toad was placed on the stage twice on each day for a week. The results which were obtained have turned out to be most interesting. Here are some of the main figures :—

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* Dr. McAtee's reply to statements made in the discussion was communicated to the meeting on 4 Oct. 1933, and appeared in Pt. II of the *Proceedings*, issued 30 Dec. 1933. Comments on a reply which has only become available at so recent a date are therefore deferred.

" 1. On the seven consecutive days the *number of bees eaten* was as follows :—45, 41, 18, 10, 8, 3, 0.

" 2. On the seven consecutive days the *number of toads* which ate bees was as follows :—26, 16, 11, 6, 5, 3, 0.

" At the conclusion of this experiment the toads were fed on meal-worms and most of them ate well and were very hungry. I then rested the toads for a fortnight, during which they were again starved, and repeated the whole experiment, obtaining clear proof that the lesson was partly remembered, seven of the toads refusing to touch the bees throughout, and the remainder learning to avoid them much more quickly than before.

" In view of the ideas of some herpetologists that Anura feed indiscriminately, and go for pretty well anything that moves and happens to be of convenient size, I am very glad to have this evidence, which seems to support the evidence of discrimination given in my account of the stomach contents.

" 21 *February*.—I may say that I have kept a careful record of the *behaviour* of the toads, and of the occasions (as far as it was possible to observe) when the animals were stung either externally or internally. Although many toads were badly stung inside the mouth or on the tongue, on no occasion was a bee *ejected* once it was taken into the mouth, in spite of the most marked signs of discomfort. Deglutition is complete. I mention this as it is possible to argue that the absence (relative) of aposematic insects in the stomachs of wild batrachians is simply due to ejection, rather than to discrimination and avoidance, as I believe. This point I mentioned on p. 524 of my Zambesi Frog paper (*Proc. Zool. Soc.*, **1932**)."

I may add that the behaviour of *Lacerta viridis* was exactly as Mr. Cott describes. When hungry, these lizards always swallowed the common wasps offered to them, in spite of signs which every observer, except Dr. McAtee, would have recognised as indications of discomfort.

Dr. F. Morton Jones in a letter to Prof. Hale Carpenter, wrote 23 Oct. 1933, in reference to his experiments on the African Acridian *Dictyophorus laticinctus* * :—

" I am reminded of similar observations upon two N. American species (Taeniopodae, *Romalea microptera* and *Taeniopoda eques*). See Hebard 1925, *Trans. Amer. Ent. Soc.*, **51** : 5, 11. These are large, clumsy, gaudily-coloured insects, the former always and the latter often incapable of flight; and both exhibit the pouring out of distasteful secretions, accompanied by a hissing sound, when disturbed. With the former I have been making some bird-feeding experiments which indicate its recognition and refusal by several species of insect-eating birds. *Romalea*, in its early stages, has the habit of feeding and sleeping in

* Hale Carpenter and E. B. Ford, *Mimicry*, p. 94, Lond., 1933.

massed assemblages, thus increasing its conspicuousness while the individuals are small."

The following passage is quoted from a letter which, written 28 Nov. 1933 by Mr. T. H. E. Jackson, in reference to the discussion on 7 Dec. 1932, arrived by air-mail from Kitale, about five weeks ago :—

" I cannot see how anyone who has studied insects in the field can doubt the theory of Mimicry, though I think a doubter would be far more easily convinced if he collected in a tropical country such as this. If it is not enough to see insects in a drawer, it is certainly enough to catch them oneself. We took, in one small patch of forest in Uganda, 5 distinct varieties of *Pseudacraea eurytus* mimicking *Planema tellus eumelis*, *epaea paragea*, *poggei*, *macarista*, and a black-and-white female, probably of *macarista*, and though all are good mimics, even in a drawer, in the field they are perfect. The flight of the black-and-white females of *Ps. eurytus* is not only quite unlike that of a *Pseudacraea* but also quite unlike that of its own males. Another case is the ♀-f. *peculiaris* of *Papilio cynorta* : two were taken, both as *Pl. epaea paragea*, of which we were collecting a series, and only discovered our mistake after removing the mimics from the net."

Two important memoirs which appeared during the past year have a direct bearing upon the discussion. The first of these, which I owe to my friend the Rev. F. C. R. Jourdain, is the outcome of three years of laborious research devoted by Dr. H. N. Kluijver to the biology and ecology of the starling.* It is beyond the scope of this address to do more than briefly indicate a few of the recorded observations, but I have added in an appendix (p. 14) an abstract of the author's summary, which is written in English, and also of his tabular statement of insect prey brought to the young by the parent birds of two colonies nesting in boxes near Wageningen, Holland. During the years 1929, 1930 and 1931, insects to the number of 16,484 were removed with forceps from the gullets of the nestlings, prevented from swallowing by means of an aluminium collar (harmless if worn only 4 hours a day), or from the nest if rejected by young. These insects were found in 1112 food-samples, 448 of which were collected immediately after the departure of the parents. The remaining 664, collected after the young had worn the collars for an hour or more, were less complete because some of the prey had been rejected by the nestlings and then taken by the parents.†

The author's conclusion that " the starling does not hunt a special insect-species, but . . . usually catches what it can get easiest with its instinctive hunting-method " (p. 138) is entirely justified by his tabular statement, but this does not conflict with another inference—that certain insects are almost or entirely neglected. Remembering the number of insects, the extent of the territory of the chief Colony, A, ‡ which rose to about 100 acres in 1931, and the three years over

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[*] Kluijver, H. N. " Bijdrage tot de Biologie en de Ecologie van den Spreeuw (*Sturnus vulgaris vulgaris* L.) gedurende zijn voortplantingstijd." A thesis submitted for the Degree of Doctor of Agricultural Science, by order of the Rector-Magnificus of the Agricultural High School, Wageningen. Also published as " Verslagen en Mededeelingen van den Plantenziektenkundigen Dienst te Wageningen," no. **69**, 146 pp. Wageningen, June 1933. H. Veenman & Zonen.

[†] Information as to the two kinds of samples included in the total, has been very kindly supplied to me by the author.

[‡] Shown on the map (p. 5).

which the investigation extended, the fact that 799 Hymenoptera included not a single bee or Vespid and only one Fossorial wasp, *Crabro cribrarius*, L.; the 3307 Lepidoptera, only one *Zygaena filipendulae*, L., and two *Euchelia jacobaeae*, L.; the 4490 Coleoptera, only two Coccinellids belonging to different species; also that the Hemiptera (Heteroptera and Homoptera), totalled only 17; while but two *Forficula auricularia*, L., were present contrasted with 765 Orthoptera, including 565 larvae and imagines of the Acridian *Stenobothrus viridulus*, L.—all these facts point unmistakably to preferences and discrimination. We also arrive at another equally interesting conclusion,—that these abundant and powerful birds, although they nearly always neglect stinging insects and certain species known to be distasteful to some insect-eaters, nevertheless attack and carry off great numbers of other abundant and conspicuous species, such as the moth *Stilpnotia salicis*,* L. (596 of all three stages), the Malacoderm beetle *Telephorus fuscus*, L. (1392) and the Galerucid beetle *G. rustica*, Schall. (1323 larvae and imagines).

Arresting numbers among the 7097 Diptera are 1693 larvae of *Tipula paludosa*, Mgn.; 118 *Beris vallata*, Forst., all taken to late or second broods in 1929; also 2276 *Rhagio* [*Leptis*] *scolopaceus*, L.; and 852 *Scopeuma* [*Scatophaga*] *stercoraria*, L., all but 50 taken to the first broods.

A sheet of notes accompanying Dr. Kluijver's thesis includes three, of which translations are printed below:—

III. A knowledge of the analyses of the stomach contents of wild birds is insufficient for judging their economic importance.

IV. By his quantitative investigations of the contents of bird stomachs, McAtee has not convincingly shown that so-called "protective adaptations" are of no importance (Smithson. Misc. Coll., **85**, No. 7, 1932).

V. The occurrence of insect outbreaks in our [Dutch] forests can be greatly hindered by an abundance of insect-eating birds. This can, in our opinion, be obtained by the establishment of artificial nesting places.

The second memoir,† to which my attention was directed by my kind friend Dr. Neave, describes the results of a careful investigation into "the distribution of mammals inhabiting the Tularosa Basin of southern New Mexico, particular attention being paid to the mammals of an area of white sand dunes and of a black lava flow of recent origin." These two areas "lie in close proximity in the center of the desert plain which forms the lower part of the basin," the climatic conditions being very similar. The colour resemblance to these areas was restricted to those mammals which tended to be isolated on them, and the colours of the mice persisted when they were removed to dissimilar environments. F. B. Sumner's researches on the inheritance of similar colours in mice of the genus *Peromyscus* lead to the inference "that the characters of the mice of the Tularosa Basin are likewise inherited." Colour appears to be the only physical feature of the environment which is correlated with the colours of the animals. "As it is improbable that the color of the background can directly affect the color of the mammals which live upon it, it does not appear probable that the colors of the races are due to the direct action of any one of the environmental factors." . . . " The extremely wide range of variation present in some of the races inhabiting these special areas is probably due to the fact that the barriers . . . are not impassible, . . . thus allowing ' normal ' individuals from the surrounding area to intermingle and interbreed with the peculiar races. It is possible, however, that the wide range of variation may mean that selection has not yet established a constant race." The final paragraph of the author's " Summary and Conclusions " (pp. 63, 64), briefly abstracted above, is as follows :—

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* 1932 (1933) *Proc. Ent. Soc. Lond.*, **7**: 83 and footnote.

† "Concealing Coloration among some Desert Rodents of the Southwestern United States," by Seth B. Benson. Univ. Calif. Publ. Zool., **40**, No. 1: 1–70, pls. 1–2, 8 text-figs., 13 June, 1933.

" The presence of this situation, and of similar situations in other areas which are nearly white or black in general color, indicates that the color of the background, through natural selection, may be an important factor in determining the color of mammals."

Concerning the general problem of the development of colour in desert races the author concludes that " certainly the extreme views expressed by McAtee (1932) * and Buxton (1928) † are not justified on the basis of the present evidence. The latter wrote (*op. cit.*, p. 170) that no progress could be made in solving the problems of the colors of desert animals ' until we rid ourselves of our belief in protective coloration, at any rate so far as it is applied generally to desert animals ' " (p. 62).

The necessary limitations imposed upon the writer of an Annual Address prevent any further reference to this most interesting paper with its beautiful coloured plate, but owing to the kindness of our Fellow Dr. F. Morton Jones, a copy has now been added to the Library.

The observations and conclusions of H. Lyster Jameson ‡ on a pale form of the Common Mouse found by him in 1895 on sandhills near Dublin are confirmed by the above memoir. These sandhills stretch along the coast for about 3 miles from Clontarf to Sutton, on the north side of Dublin Bay, and are separated from the mainland by a tidal channel averaging $\frac{1}{4}$ mile wide at high water, and by extensive mud flats and a narrow strip of water about 20 yards wide, at low tide. The island is, however, connected with the mainland by a bridge and a breakwater. The mice, which were very numerous, showed every gradation between the pale sand-like forms and the common grey mouse. The author concluded that their excessive abundance followed from the absence of terrestrial enemies on the island and that the evolution of the pale colour was due to selection by the Short-eared Owl and by numerous hawks which " pick out the darker mice. The very scanty cover, and the probability that the mice have to travel some distance for their food over bare sand, make the dangers to dark and conspicuous mice much greater." A careful study of maps and all available records led the author to believe that the island first came into existence between 1775 and 1800, and that the evolution—still far from complete—of this pale local race, had been accomplished in from 100 to 125 years.

There is one other memoir to which I feel bound to direct your special attention, although it appeared in September 1932 and thus slightly preceded the year during which I have had the honour to occupy this Chair. I refer to Prof. Jacobus C. Faure's important work * describing his experiments on South African locusts.

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* Smithson. Misc. Coll., **85** (7) : 1–201.

† *Animal Life in Deserts*, Lond., pp. v + 176.

‡ " On a probable Case of Protective Coloration in the House-Mouse (*Mus musculus*, Linn.), 1898, *J. Linn. Soc.* (*Zool.*), **26** : 465–473, pl. 30.

No more arresting pronouncement has ever originated from the science of Entomology than that made by B. P. Uvarov † when he stated his conclusion that the locust swarms which had terrorised and mystified mankind since the dawn of history, and probably ever since that early stage in human development when our ancestors first began to grow and to rely upon crops for their food—that these desolating and incalculable swarms were the migratory phase of a solitary grasshopper developed under the stimulus of overcrowding and therefore, given sufficient knowledge, no longer incalculable and, we may hope in the not distant future, no longer a terror.

It is a splendid thing to have proved this far-reaching theory experimentally, and this Prof. Faure has done by transforming the solitary grasshopper (the phase *solitaria*) into the migratory locust (the phase *gregaria*), in the South African species *Locustana pardalina*, and *vice versa*; also, at present less completely, in other species. The investigations and great expense of printing and illustration were generously supported by the Carnegie Corporation of New York by means of a subsidy administered by the Research Grant Board of the Union of South Africa. The striking differences between the solitary and gregarious migratory stages of four species are illustrated in coloured plates ‡ prepared from the beautiful drawings of Prof. A. J. T. Janse, D.Sc., F.R.E.S. In addition to the coloured plates a large number of excellent photographs of the phases, including the results of many experiments, are reproduced on plates xx–xxiii, xxvi–xxxiv, while types of the country and veld vegetation in the permanent breeding-grounds of *L. pardalina* are illustrated on xxiv, xxv, and the out-door laboratory at the University of Pretoria, on xxxv, with the cages and other apparatus employed in the experiments on xxxvi–xxxviii. The map facing p. 388 shows the permanent habitat in 1915–1931 of *L. pardalina*, phase *solitaria*, the range of its invasions in 1906–1926, and the areas where incipient swarms were destroyed in 1928–1931. The preparation of the plates and details of publication must inevitably have thrown an immense amount of work on the editors of the Bulletin, especially Dr. Neave, who has earned the gratitude of every follower of our science.

In addition to the main result of these most important researches, other experiments upon the power of individual colour-adjustment are of great interest.

The author's conclusion (p. 365) that "locustine," the mainly cuticular, black coloration of the *gregaria* phase, passes into the yolk, is absorbed by the embryo and thus "finds its way into the cuticula to produce the black characteristic of the first instar," is strikingly similar to the fate of the modified chlorophyll which passes from the larva of *Smerinthus ocellatus*, L., into its pupa, thence into the eggs and finally the young larvae which are green on hatching and therefore before they have had the chance of gaining fresh chlorophyll from the food-plant.*

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* "The Phases of Locusts in South Africa," 1932, *Bull. Ent. Res.*, **23** : 293–405, pls. xiv–xxxviii and Map.

† 1921, "A revision of the genus *Locusta*, L., with a new theory as to the periodicity and migrations of Locusts," *Bull. Ent. Res.*, **12** : 135–163, figs. 1–8.

1928, "Locusts and grasshoppers: a handbook for their study and control,"—London, Imp. Bur. Entom., xiv + 352 pp., 118 figs., 9 pls.

‡ (1) *Locustana pardalina*, Walk., the "Brown Locust" (pls. xiv, xv, and xix, figs. 58, 59); (2) *Nomadacris septemfasciata*, Serville, the "Red Locust" (pl. xvi); (3) *Locusta migratoria migratorioides*, Reiche & Fairmaire, the "Hairy-chested Locust" (pls. xvii, xviii, and xix, figs. 57, 60–62); (4) *Schistocerca gregaria*, Forskål, the "Migratory Locust" (pl. xix, figs. 53–56). Only the phase *solitaria* was available for experimental work upon (3) and (4), while (2) was not obtained until March 1931, so that but few observations upon it could be included in this memoir.

In repeating experiments on the effect of food devoid of chlorophyll (pp. 360, 631) it would be interesting to test the hoppers with food similar to that supplied to the larvae of *Tryphaena pronuba*, L., † viz. with yellow, etiolated internal leaves, shielded from light as they are in the heart of a cabbage, also with their fleshy midribs alone, with the etiolin at a minimum and buried beneath the surface. In the experiments referred to the larvae were able to obtain their green or brown colour from the etiolated leaves no less than from the green ones, but, when fed upon the midribs alone, became white and maggot-like, although with the addition of cuticular pigments in certain parts (as also in the maggot-form of larva).

In the slight effect of coloured glass and the apparently negligible effect of blinding (pp. 354–56) the results corresponded with those of experiments on the larvae and pupae of Lepidoptera ‡ which moreover suggest that the natural surroundings—local sands and rocks of different colour—would be more effective than artificially painted surfaces. The facts recorded in this valuable memoir prove that there is a conflict of stimuli acting upon the young hoppers when crowded—the stimuli arising from the colours of the ground surface, which produce cryptic resemblance in the solitary phase, and, opposed to these, the stimuli arising as some consequence of crowding. The latter not only overcome the former, which are of course always present, but produce a definite result in the characteristic behaviour and in the warning pattern of orange or yellow and black, so well illustrated by the author on plates xiv, fig. 6; xv, figs. 19, 23; xvi, figs. 31, 32, &c. It may be suggested that it would be very interesting to ascertain whether qualities distasteful to certain insect-eating animals are developed in response to these stimuli—qualities perhaps present in the pigments themselves, or independent but associated with them.

Prof. J. C. Faure's abundant proofs that a power of colour-adjustment is exhibited by the phase *solitaria* increases the interest of the following observations upon other species of ACRIDIDAE.

The resemblance of certain South African Acridians to the local surroundings was observed in 1814 and recorded in his MS. catalogue by W. J. Burchell.§ Thus, under the date 21 November, 1814, he wrote a Latin note on the colour of *Xiphocera* (*Lamarckiana*) sp., ? *cinerascens*, Stål, at Zoetemelks River—a tributary of the Kaffirkuils R., about 7 m. S.E. of Riversdale. A translation is as follows:—"The whole body (including the eyes) is coloured like the stones and sand of the locality which it inhabits, and the colour does not alter. It lives in dry stony places, and is sluggish, leaping heavily." That this great naturalist actually experimented is, I think, rendered certain by his statement that the colour does not alter—it may be inferred that he meant "does not alter rapidly"; although the name "*Chameleon*" which accompanies the description of this Acridian in his catalogue probably implies that he recognised the existence of some power of individual colour-adjustment as necessary to explain the observed facts.

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* 1887, *J. Physiol.*, **8**: xxv, xxvi.

† 1893, *Proc. Roy. Soc.*, **54**: 417, pls. 3, 4.

‡ 1887, *Phil. Trans. Roy. Soc.*, **178**, B: 311. *Trans. Ent. Soc. Lond.*, **1892**: 293; **1903**: 311.

§ III Internat. Entom.-Kongr., Zürich, July, 1925, (Weimar, 1926,) **2**: 434–37.

The resemblance of Acridians and other insects to the scorched and blackened vegetation caused by African grass-fires, observed by Sir Charles Martin, C.M.G., F.R.S., &c. (1912), C. F. M. Swynnerton, F.R.E.S. (1913), and Prof. G. D. Hale Carpenter, D.M., F.R.E.S. (1914, 1925), is fully recorded in the paper referred to above (pp. 438–450), where it is shown that the native custom of burning the grass in the dry season is probably of great antiquity (p. 439).

The contrast between 73 dark reddish-brown Acridians, taken 19 Aug. 1901, by my elder son and myself, on the red-brown soil of Heligoland, and the 80 pale sand-coloured, sometimes green-marked, examples of the same species, captured by us, the following day, on the Düne, a sand-bank with coarse grass, three-quarters of a mile away, led to the conclusion that "there is little doubt that these results, observed without a single exception in such large numbers, in two localities so near to each other, point to the conclusion that the species possesses the power of adjusting its colours to those of its normal surroundings, although these may differ widely from one another." *

The most beautiful example of adaptable protective resemblance hitherto observed in a European Acridian was exhibited to the Society on 1 November, 1933, by Mr. J. A. Simes, O.B.E., F.R.E.S., viz. *Oedipoda germanica*, Charp.—red on porphyry rock at Agay in the Estérel Mountains, grey like the limestone of the neighbouring foothills (*Proceedings* of 1 November, 1933).

ENTOMOLOGY AND HUMAN LIFE.

In the concluding section of this address I trust that one who has been a Fellow for half a century may be excused for dwelling upon personal experiences. To do so is almost inevitable when the subject to be treated is the study of natural history —and here especially the study of insects—in its relation to human life. There is an aspect of this relationship—a most beneficent aspect—which had not occurred to me until recently, indeed not until the preparation of this address became urgent. It is an inspiring thought that the study promoted by our Society is one which remains ever fresh, nay becomes more and more appealing with advancing years. I have recorded elsewhere † words spoken by John Blackwall in 1879 :— "Discussing with considerable scepticism the belief that the bite of certain spiders was poisonous to man, Blackwall told me that he had often received monstrous tropical species with the most sinister reputation, and I clearly recall his pathetic tone of disappointment as he said :

"'They might have had cheek or lip, but not one of them would bite me!'

"Had not my interests been already fixed, here was enthusiasm at the age of 89, which might well have persuaded me to be an arachnologist."

A more recent experience showed the power of a scientific interest—in this instance the study of insects—to enable a naturalist to live happily in his work and waste neither time nor thought in lamenting the material losses and discomforts caused by the war.

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* III Internat. Entom.-Kongr., Zürich, July, 1925, (Weimar, 1926,) **2** : 437, 438.

† *Proc. Roy. Soc.*, 1920, pp. li, lii.

Another memory is of a very different kind and I well remember the surprise felt when a distinguished scientific friend, who was looking forward to retirement and a place in the country, replied to congratulations on the prospect of giving the whole of his time to his own researches—" Well, I think one is entitled to rest at sixty." I fear that a comment suggesting that it might be preferable to end altogether was not entirely sympathetic.

No, the despairing cry—

" . . . Is there any peace
In ever climbing up the climbing wave ? "

is not for the scientific worker, least of all for the student of nature. It is otherwise with less fortunate lives. How often do we hear of hard-working men who are looking forward to a time of delightful leisure after retirement, and then enter upon the most unhappy period of life, mercifully shortened in many instances by a speedy death. Absorbing interests do not spring into existence ready-made just because a man wants them. But the naturalist need have no such fear : his interests will never desert him, but, so long as his mental faculties endure, will be always with him, growing with his growth. But this cheering thought raises the insistent doubt—Can we hope that the faculties necessary for the life and happiness of the naturalist *will* endure ? I believe that we can and that their exercise helps them to endure and even in some respects to grow.

I have been told that when Francis Galton was asked by a friend whether he was well, the old man would clasp his neck with both hands and say—" I'm all right as far down as this." And how true a conception ! For what is the body but a servant of the brain with its sense-organs—a servant attending to all its various wants and an internal combustion engine to carry it about, easily replaced, too, by another less attractive form of locomotive apparatus.

I venture to think that Matthew Arnold's lovely, pathetic lines on old age, in " Thyrsis " are altogether too mournful and depressing.

" . . . The brown hair sprent with gray "

often appears before middle age and is to be welcomed in many careers—a comfortable asset for the doctor, lawyer and salesman, most reassuring in its effect upon patient, client and purchaser.

And as for—

" The heart less bounding at emotion new,
And hope, once crushed, less quick to spring again,"

I am sure that the longed-for message from a friend that he had actually observed a male Danaine butterfly performing its toilet and inserting its brushes into the hind-wing scent-pockets, would produce a feeling of exaltation increased rather than diminished by the long years of expectation unfulfilled.

One loss must be admitted—that of memory, but it is a comforting thought that the unimportant things are the first to go. A name is forgotten when the man himself is remembered—recognised when seen from behind, recognised by his walk, or by some peculiarity of attitude or movement. One memory which meant life or death to our primitive ancestors is retained while another which was a convenience but of no real importance is lost.

Granting the failure of memory, how far is it accompanied by a diminution in imagination, in the power of making the leap from the known to the unknown? Matthew Arnold certainly expresses a sense of this loss in the lines :—

> "And long the way appears, which seemed so short
> To the unpractised eye of sanguine youth;
> And high the mountain-tops, in cloudy air,
> The mountain-tops where is the throne of Truth,
> Tops in life's morning sun so bright and bare."

I venture to believe that this contrast between imagination in youth and age has not been my own experience. More than 47 years ago I made some observations on "The softening of the contact between a Geometer larva and the twig on which it is resting"*—observations prompted by the following note published by my dear friend the late Prof. Raphael Meldola, in his translation of August Weismann's "Essay on the Markings of Caterpillars" † :—"The adaptive resemblance is considerably enhanced in *Catocala* and in *Lasiocampa quercifolia* by the row of fleshy protuberances along the sides of these caterpillars, which enables them to rest on the tree-trunks by day without casting a sharp shadow." This interpretation, subsequently accepted by Sir John Lubbock and Peter Cameron,‡ I found to be strongly confirmed by the existence of such fleshy protuberances at the one part in the body of a Geometrid larva at which there is the necessity for maintaining apparent continuity with the food-plant—and at this part only, viz. "at and between the two posterior pairs of claspers." Now although the fleshy processes largely obliterate the revealing cleft between the body of the larva and the bark, "a considerable furrow remains, but this is not apparent because of the light colour of the fleshy processes, which prevent the attention from being directed to the shadow which would otherwise indicate the position of the groove. The processes therefore attain the object of softening the contact between the larva and its food-plant in a twofold manner, by partially filling up the cleft, and by neutralising the shadow in the groove which remains."

But what a failure of the imagination not to realise that here was the meaning of the light colour at the contact between almost any living body and the earth—the meaning of the white undersides of animals.

And the failure is all the more astonishing because, two years later, the flat and leaf-like appearance of the chrysalis of the Purple Emperor butterfly (*Apatura iris*) was seen to be brought about by the same principle; and explained in greater detail.§ In precisely those parts of the pupa, "where the obvious thickness would destroy the resemblance to a leaf, the whole effect of the roundness is neutralised by the increased *lightness* . . . —a lightness which is so disposed as to just compensate ‖ for the shadow by which alone we judge of the roundness of small objects (much larger objects can be judged of by the change of focus, which becomes necessary as their near or distant parts are observed ¶). In shading the drawing of an object so as to represent roundness, the shade is made to become gradually less and less deep as the tangential planes represented come nearer and nearer to a right angle with the axis of vision. So here, the converse of shading,—the whiteness neutralising the shadow which shading is intended to represent,—dies off gradually as the midrib is approached.

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* "Notes in 1886 upon lepidopterous larvae, &c." : *Trans. Ent. Soc. Lond.*, **1887** : 292–4.

† *Studies in the Theory of Descent*, Engl. transl. by Meldola, Lond. 1882, p. 292.

‡ *Trans. Ent. Soc. Lond.*, **1878** : 242; **1880** : 75, respectively.

§ *Trans. Ent. Soc. Lond.*, **1888** : 595–7.

‖ Please pardon the split infinitive!

¶ This method of judging depth was pointed out to me by my old friend the late Prof. R. B. Clifton.

"The whiteness is produced by the relative abundance of white dots and a fine white marbling of the surface which is present everywhere, mingled with the green. The effect is, in fact, produced by a process exactly analogous to stippling.

"By this beautiful and simple method a pupa, which is 8·5 mm. from side to side in its thickest part, appears flat, and offers the most remarkable resemblance to a leaf which is a small fraction of 1 mm. in thickness."

These passages are quoted in full because they clearly show the failure to take a step which now seems so obvious. My old friend Osbert Salvin once told me of Huxley's words when Alfred Newton went to examine a mysterious box labelled "Penguins' eggs" in the museum of the Royal College of Surgeons and found that it contained ten eggs of the Great Auk—"Why you're like Saul, the son of Kish, who went out to seek his father's asses and found a Kingdom!" Surely, if these rare and precious eggs are to be compared with a Kingdom, the meaning of the white undersides of animals should be represented by an Empire—the Empire *not* found by a young man who sought to understand the devices by which a caterpillar and a chrysalis are hidden from their enemies—not found as it would have been by a more alert and wide-ranging imagination.

Would he have made the discovery later on? Probably not, but we can never know for certain because it was made and published in 1896 * by the American artist, the late Abbot H. Thayer, who became a dear friend and told me how the solution had come to him. In his experience as an artist he had found that it was nearly always impossible to paint a wild animal in its natural surroundings as an arresting feature in the composition, and when this *was* achieved it was by posing it silhouetted against the sky or in some other exceptional position. He was thus led to study a great variety of animals and finally reached his great conclusion that their colouring—darkest on the back, becoming gradually lighter on the sides and passing into white on the belly—obliterates the appearance of solidity, which is due to shadow. A colour-harmony also essential for concealment follows because the back, of the same tint as the earth bathed in the cold blue-white of the sky, resembles the under surface with its cold blue-white bathed in shadow and yellow earth reflections. Thus, as Thayer pointed out, the body of an animal disappears while its markings representing dead leaves, upright stems, &c. are alone distinctly seen. For ages the artist has produced the appearance of solid objects standing out on his canvas, by painting in the likeness of shadows. It remained for this great artist-naturalist to realise the logical antithesis, and to show that solid objects may fade away and become ghost-like or even invisible by painting out the shadows.†

I trust you will excuse a second personal experience which, having been recorded ‡ comparatively recently, requires only brief mention. Nearly forty-seven years ago I observed,[*] to my surprise, that the males of the Saturniid moth *Aglia tau*, L., well known to seek the virgin female from considerable distances, rarely paid any attention to them when bred in the same cage. The same apparently strange and unnatural behaviour was observed from time to time in the bred males of other moths, also known to "assemble" in the wild state, but the meaning was a mystery and even remained so in 1922 when my friend Dr. Eltringham experimented with the "Oak Eggar," *Lasiocampa quercus*, L., and found that a single bred male which had escaped and flown about in a greenhouse was ready to pair, while all the others neglected the females and dispersed when liberated, as described in our *Proceedings*, **2** : 76. The absurdly simple interpretation of the behaviour suddenly occurred to me an hour or two after a meeting of the O.U. Entomological Society, where the subject was discussed, in the Autumn Term of 1927. If the freshly bred males responded to the stimulus and at once "assembled" and paired, the result would be extensive in-breeding; for the female parents, being heavy and slow-flying, do not distribute their eggs far and wide, and the pupae of the whole family are scattered over a very limited area. But the freshly emerged males are incapable of responding to the epigamic stimulus and only become susceptible to it when their powerful flight[†] has carried them far away from the family domain.

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* 1896, *The Auk*, **13** : 124, 318.

† The statement on pp. 299, 300 of "Essays on Evolution," Oxford, 1908, has been reproduced slightly modified and shortened in the above paragraph.

‡ 1927, *Proc. Ent. Soc. Lond.*, **2** : 75–82.

It does seem extraordinary that such a simple explanation did not suggest itself at once, but it has been the same with other simple explanations. Thus, to compare a very great thought with a very small one, we may remember Huxley's words on Natural Selection—"My reflection, when I first made myself master of the central idea of the 'Origin' was, 'How extremely stupid not to have thought of that!'"[‡]

I remember when preparing for Classical Moderations—an examination no longer taken by science men but one which taught me far more than the grammar and the attempts to write bad Latin prose in Responsions—the "Heaven-sent precept 'Know thyself,' a maxim you must imprint and ponder over in your unforgetting heart,"—the special advantages of this knowledge, as stated by Juvenal, sound rather quaint but are certainly very wise—"whether you seek a wife or a place in the august Senate."[§]

What a man can remember of his own work must inevitably seem more to him than to others, but I hope that the memories I have ventured to bring before you to-night do lead to the belief that the happiness which springs from the observation and study of insects is life-long and increases with accumulating experience. I am well aware, and rejoice in the fact, that this is also true of scientific and literary studies generally, but I believe it to be especially true of sciences like Entomology which bring their followers into frequent contact with living nature and with kindred minds.

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[*] *Trans. Ent. Soc. Lond.*, **1888** : 555.

[†] It would be interesting to observe whether this first flight is different in character from the epigamic flight so well known in the males of "assembling" moths.

[‡] *Life and Letters of Charles Darwin*, Lond., 1887, **II** : 197.

[§] Juvenal, xi : lines 27–30 :—

> ". . . E caelo descendit *γνῶθι σεαυτόν*,
> Figendum et memori tractandum pectore, sive
> Conjugium quaeras vel sacri in parte Senatus
> Esse velis. . . ."

The Greek motto was inscribed in the Temple of Delphi and was variously ascribed to one or another of the Seven Sages.

A brother-Fellow of my College, Mr. C. J. Fordyce, M.A., has kindly given me the reference which I had forgotten, and the translation. He has also reminded me of another quaint but very practical reason for a man knowing his own measure and observing it "in things both great and small, even when it is a fish that is being bought, so that you may not set your heart on a mullet when your purse can only afford a gudgeon" (xi : lines 35–38).

APPENDIX.

Abstract of Dr. H. N. Kluijver's list of 17,933 prey contained in 1112 food samples collected by the neck-ring method in 1929, 1930, and 1931, from young starlings in a locality near Wageningen, Holland. The prey collected from young of the first brood is recorded in a column for each of the three years, as also that collected from " later and second brood " (verv. en 2^e br.).

Omitting further mention of the 165 worms, 347 Gasteropoda, 71 Isopod Crustacea, 8 Myriopoda, 802 Arachnoidea, 4 Amphibia, 1 Reptile, 16 plants, and 35 mineral substances, the 16,484 Insecta (imagines unless otherwise stated), may be summarised as follows :—

ORTHOPTERA.—765 (1st br.,* 15 only), including 565 *Stenobothrus viridulus*, L., 167 *Mecostethus grossus*, L., 28 *Xiphidium dorsale*, Latr., and 5 specimens representing 4 species. The three above-named species were given as larvae and imagines, and 1 *Decticus verrucivorus*, L., as a larva.

DERMAPTERA.—2 *Forficula auricularia*, L., 1st br.—1 in 1930, 2nd br.—1 in 1931.

EPHEMEROPTERA.—1 ?*Cloeon dipterum*, L., 1st br.

ODONATA.—1 *Brachytron hafniense*, Müll., 1st br.

HEMIPTERA.—17 (1st br., 5 only), including 10 specimens (2 larvae) representing 4 species of Heteroptera and 7 representing 3 of Homoptera.

NEUROPTERA.—2 *Sialis lutaria*, L., 1st br.

TRICHOPTERA.—3 (1st br., 1), 1 each of 3 species.

LEPIDOPTERA.—3307, including 113 undetermined larvae, pupae and imagines. The butterflies are :—undetermined—2, *Argynnis aglaia*, L. ;—6 ; *Vanessa urticae*, L.,—56 larvae and pupae ; *Epinephile jurtina*, L.,—160, all stages ; *Coenonympha pamphilus*, L.,—8 ; *Hesperia sylvanus*, F.,—1. Of the moths the chief were *Crambus* sp. (larv., imag.)—312 ; Noctuidae indet. (3 stages)—202 ; *Charaeas graminis*, L., with *Neuronia popularis*, F., (larv.)—613 ; *Hadena monoglypha*, Hfn., (larv.)—992 ; *Hadena secalis*, L., (larv., imag.)—85 ; *Agrotis* [*Tryphaena*] *pronuba*, L.,—43 (2nd br.) ; *Stilpnotia salicis*, L., (3 stages)—596 † (1st br., 11).

Interesting records among the small numbers are—*Cossus cossus*, L., (larv.)—1 ; *Zygaena filipendulae*, L.,—1 ; *Amphidasis betularius*, L.,—1 ; *Euchelia jacobaeae*, L., —2 ; *Spilosoma* sp. (larv.)—6 ; *Spilosoma menthastri*, Esp.,—2 ; *Agrotis c-nigrum*, L.,—1 ; *A. rubi*, V.,—18 ; *A. plecta*, L.,—1 ; *A. exclamationis*, L.,—18 ; *Plusia gamma*, L.,—7.

COLEOPTERA.—4490, including 14 indet. larv., imag. CARABIDAE—48 indet. larv. ; 24 species, including *Poecilus cupreus*, L.,—114 ; *Pterostichus vulgaris*, L.,—

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* The author's " 1st brood " is thus contracted and his " later and 2nd brood " is, for the sake of brevity, printed as " 2nd br.," but this must be understood to mean, the author kindly informs me, those 1st broods which are later than usual as well as second broods.

† This species was abundant on the poplars in June 1930 and the larvae and pupae as well as the flying and resting imagines were often captured by the starlings.

138; *Leistus* sp.—1 larv.; *Nebria* sp.—7 larv. DYTISCIDAE—5 sp. (13 specimens) including 4 larv. *Dytiscus* sp. STAPHILINIDAE—15 sp. (80 specimens). CLAVICORNIA—16 sp., including 11 specimens of 5 SILPHIDAE (1 larv. of *S. obscura*); 6 of 3 sp. *Hister*; *Coccinella bipunctata*, L.,—1; *C. conglobata*—1. SCARABAEIDAE—13 sp., including 22 larv. *Anomala aenea*, De G. The largest numbers were *Aphodius fossor*, L.,—87; *Hoplia philanthus*, Füssl.,—76. ELATERIDAE—14 sp., including indet.—1. The largest numbers—*Limonius pilosus*, Leske,—69; *Agriotes sputator*, L.,—161. MALACODERMIDAE—9 sp., the full numbers, as follows:—*Dascillus cervinus*, L.,—1; *Telephorus pallidus*, Goeze,—1; *T. lividus*, L.,—2; *T. fuscus*, L.,—1392 (1st br., 1929—950, 1930—145; 1931—225; 2nd br., 1929—6, 1930—60, 1931—6); *T. bicolor*, Herbst.,—2; *T. fulvicollis*, F.,—228 (1st br.—4); *T. nigricans*, Müll.,—1; *T. rufus*, L.,—182 (2nd br.—61); *Malachius marginellus*, F.,—1. LONGICORNIA—6 specimens among 5 sp. (1st br., 1). PHYTOPHAGA—5 sp., the complete record, as follows:—*Agelastica alni*, L.,—1; *Galeruca rustica*, Schall., (larv., imag.)—1323 (1st br., 1929—186, 1930—79; 2nd br., 1929—906, 1930—150, 1931—2); *Cassida rubiginosa*, Müll.,—1; *C. vibex*, L.,—1; *C. sanguinolenta*, Müll.,—1. CURCULIONIDAE—23 sp., including indet., all stages—14. Only 54 specimens of the 22 species, the largest number being 12 *Phylopedon plagiatum*, Schall., while 14 species are represented by single examples.

HYMENOPTERA.—799, including 1 indet. TENTHREDINIDAE—292, including 271 indet. larv. (2nd br., 1930—269) and 21 specimens of 6 sp., the largest being 13 *Tenthredopsis campestris*, L., (1st br.). ICHNEUMONIDAE—9, including 2 indet. and 7 named species—single records. BRACONIDAE—1 indet. HETEROGYNA—495, all but 7 from 2nd br. The important numbers are *Lasius* sp.—59 pup.,[*] *Lasius flavus*, De G.—333 pup., imag.; *L. niger*, L.,—36 pup., imag.; *L. alienus*, F.,—33; *Myrmica scabrinodis*, Nyl.,—22 pup., imag.; 6 other species of ant—12, largest number being 4 *Tetramorium caespitum*, L. FOSSORES—1 *Crabro cribrarius*, L.

DIPTERA.—7097, including indet. (chiefly all stages):—Dipt.—27, Tipulidae—56, Tabanidae—3, Asilidae—1, Syrphidae—3, Muscidae s.l.—170. The chief numbers are:—*Tipula paludosa*, Mgn.,—1693 larv. (2nd br.—219); *T. vernalis*, Mgn.,—286 (1st br.); *Pachyrrhina maculata*, Mgn.,—283 (1st br.—282); *Dilophus vulgaris*, Mgn.,—223 (1st br.); *Beris vallata*, Forst.,—118 (1st br., 1929); *Chrysomyia formosa*, Scop.,—152 (2nd br.); *Rhagio* [*Leptis*] *scolopaceus*, L.,[†]—2276 (1st br., 1929—1610, 1930—35, 1931—38; 2nd br., 1929—271, 1930—171, 1931—151); *Tabanus bovinus*, Loew.,—90 (3 stages); *Chrysozona* [*Haematopota*] *pluvialis*, L.,—493 (1st br.—8); *Empis* sp.,—175 (2nd br., 1929—102); *Scopeuma* [*Scatophaga*] *stercoraria*, L.,—852 (2nd br.—50). In addition to the above were small numbers, 22 *Dolichopus* sp. being the largest, of many other species including 22 represented by single specimens.

A summary of the methods and results of this most interesting research is given in English on pp. 137–139. The biology and ecology of the Starling were studied in two colonies breeding in nest-boxes near Wageningen, Holland. The territory of the chief Colony, A, consisting of 17 nests in 1930, occupied about 62 acres (" ± 25 ha "), but in 1931, with 28 nests, covered about twice this area (" ± 50 ha ").

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[*] The author informs me that the large numbers of *Lasius* species were chiefly made up by the pupae which could generally be determined by the workers accompanying them. He is sure that the starlings were attracted to the nests by the presence of pupae and that the workers were only picked up occasionally.

[†] This fly was especially abundant in 1929, the starlings continually flying up from the ground to catch them on the wing.

In February, March and April the birds fed in a flock on fields near the boxes, and roosted for the night with thousands of others, in the reeds of a pool 5 km. distant.

The young were fed by both sexes but more often by the females. Feeding began at sunrise and ended during the first days at sunset, but later an hour before sunset. The young were fed many times per hour in the morning, much less frequently in the afternoon.

" In a nest with two young ones of 6 to 7 days old an average number of 112 feedings per day per young one was brought in by the parents; in a nest with six young ones this number was 65. The number of feedings per day in a nest with six young ones, being 118 on the first day, gradually rose to 350 on the eighth day. . . . Once 525 feedings were brought in on one day." During the whole period of feeding, food was brought 6895 times to one nest and 7668 times to another. The quantity of food eaten by a young bird daily amounted at first to half its own weight, later to six-sevenths.

At first the faeces were excreted and removed by the parents immediately after feeding, but sometimes they were swallowed by the female. Later, they were ejected from the entrance to the nest by the young. An excessive quantity of *Tipula*-larvae frequently caused fluid excreta which, in deep boxes, tended to accumulate and often to cause the death of the young.

" To determine the food of the young quantitatively a close fitting collar of aluminium was placed round their necks, so that they could not swallow the food that was brought in by the old birds." The young could wear these collars without harm for 4 hours a day, but when accurate results were to be obtained it was necessary to remove the food from the oesophagus, with forceps, directly after the departure of the old birds.

" For the greater part the food is collected on the ground. . . . In trees and in the air the food is only collected when great quantities of food are to be found there." Table IX on p. 79 does not entirely support these conclusions, at least so far as the air is concerned, for in the years 1929, 1930, 1931 the following percentages are recorded as collected in the air for the first broods—47·5, 23, 35, and for the later and second broods—29, 24, 24.* The corresponding percentages collected in trees are given as 0·5, 1, 1, and 4, 21, 7.

The author concludes that " It has been shown that the starling does not hunt a special insect-species, but that it usually catches what it can get easiest with its instinctive hunting-method."

It is pointed out on pp. 4, 5 that the invaluable list of prey, summarised on pp. 14, 15, provides negative evidence that certain insects are avoided—evidence which may be accepted as conclusive when the number of the records and the extent of the territory are taken into account.

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* The author has kindly called my attention to the words at the bottom of p. 78, explaining that the figures for captures in the air are somewhat too high, inasmuch as all imagines of Diptera and Lepidoptera were placed in this category. A few of these were, however, taken directly after emergence and some at rest, as, for example, the moth *Stilpnotia salicis* (p. 14, note †).

INDEX

TO THE

PROCEEDINGS OF THE ROYAL ENTOMOLOGICAL SOCIETY OF LONDON

VOL. VIII (1933–34)

A

Acanthomyops flavus, attacked by birds, **111**.
Acraea spp., synaposematic association of, in Uganda, **109**.
Acraea doubledayi rileyi, from Sudan, **110**.
Adoxastia, **8**.
Aedes aegypti, effects of varying temperature on, **22**; function of anal gills in, **107**.
aethiops, Perilitus.
Africa, migration of *Libythea labdaca* in, **6**; of *Belenois mesentina*, **96**; of *Cymothoe caenis*, **144**; resemblance between *Aletis* and *Euphaedra* in, **104**; synaposematic association of *Acraea* spp. in, **109**; forms of *Planema epaea* in, **109**; forms of *Acraea doubledayi* in, **110**; resemblance between Geometrid, Hesperiid, and Lycaenid in, **126**; behaviour of moth injured by ant in, **128**; *Tirumala petiverana* assembling for rest in, **145**.
Agraulis vanillae, attacked by bird, **15**.
Agriades thetis, **129**.
albofasciatus, Denops.
alciope, Acraea.
Aletis spp., resemblance of, to *Euphaedra* spp., **104**; mimics of, in Africa, **106**.
althoffi, Acraea.
Amauris spp., **137**.
Amauris cenea, confused with *Euxanthe wakefieldi*, **137**.
America, locusts in glacier in, **22**.
americana, Chrysolina.
Amphidasys betularia, homing of, **14**.
Anastatus axiagasti, egg-parasite of *Axiagastus cambelli*, **139**; oviposition habits of, **139**.
angustimarginalis, Malachius marginellus.
Anobium punctatum, **112**.
Anobium striatum (see *A. punctatum*).
Anopheles maculipennis, relation of temperature to, **22**.
Anthribids, secondary sexual organs in, **8**.
Apatura ilia, attacked by bird, **16**.
Apatura iris, **16**.
Apis indicus, nesting association of, with *Ploceus megarhynchus*, **137**.
apollo, Parnassius.
Arabia, cells made by bees in, **9**.
arcticus, Otiorrhynchus.
Argynnis (*Brenthis*) *dia*, recorded from Britain, **111, 142**.
Artona catoxanthe, not attacked by birds in Malaya, **146**.
Aspilates gilvaria, note on larva of, **2**.
assimilis, Patrobus.
atalanta, Pyrameis.
Atheta oloriphila, from Windsor Forest, **141**.
atra, Phyllotreta.
atropos, Manduca.
aurago, Ochria.
aurantiacum, Ellipsidium.
Australia, birds attacking butterflies in, **6**.
autumnalis, Musca.
axiagasti, Anastatus.
Axiagastus cambelli, oviposition habits of parasites of, **139**.

B

banksi, Chrysolina.
Bees, cells made by, in Arabia, **9**.
Belenois mesentina, migration of, in Africa, **96**.
Belostoma fluvineum, stink-glands in, **1**.
Benacus, **2**.
betularia, Amphidasys.
bicolor, Perilitus; *Stauroderus*.
bimacula, Callimorpha dominula.
bipustulatus, Malachius.
Birds, attacking insects, **6, 14, 15, 16, 17, 96, 111, 143, 144, 145**.
bourkei, Callidryas.
Brenthis dia (see *Argynnis* (*Brenthis*) *dia*).
Brenthis freija, attacked by bird, **144**.
Brithys sp., larva of, recorded in Kew Gardens, **112**.
British Isles, third brood of *Colias croceus* in, **3**; *Malachius marginellus* in, **10**; attacks by birds on insects in, **16, 111**; insects from Windsor Forest, **10, 20, 104, 112, 141, 144**; *Callimorpha dominula bimacula* in, **111**; *Argynnis* (*Brenthis*) *dia* recorded from, **111**; *Monochamus* spp. in, **112**; larva of *Brithys* sp. imported into, **112**; ♂ of *Cucullia lactucae* bred in, **127**; *Phalera bucephala* attacked by *Picromerus bidens* in, **129**; large specimen of *Creophilus maxillosus* in, **134**; *Thera juniperata* ab. *nigra* ab.n. described from, **135**; wasps avoiding printers' ink in, **135**; time of nocturnal

activity of Lepidoptera in, **141**; *Musca autumnalis* and *Pollenia rudis* hibernating in, **142**; *Microsania* spp. in, **146**, key, **147**; *Eurydema festivum* imported into, **142**; *Repipta* sp. imported into, **142**; *Tychus niger* recorded as *ibericus* in, **144**.
brunneus, Lyctus.
bucephala, Phalera.

C

cadma, Lucinia.
caenis, Cymothoe.
caesiata, Entephria.
Callidryas spp., scent scales in, **108**.
Callidryas bourkei **sp. n.**, from S. America, **8**.
Callidryas eubule, **8**; attacked by bird, **15**.
Callimorpha dominula bimacula, **111**.
Calliprobola speciosa, from Windsor Forest, **104**.
cambelli, Axiagastus.
canadensis, Polistes.
cardui, Pyrameis.
carpini, Saturnia.
Catocala electa, homing of, **13**.
Catopsilia crocale, relation of, to *C. pomona*, **20**.
Catopsilia pomona, relation of, to *C. crocale*, **20**.
Catopsilia pyranthe, dimorphism in, **22**.
catoxantha, Artona.
Celerio galii, hybrid between, and *Rhodafra opheltes*, **131**.
cenea, Amauris.
Centenary meeting, report of, **25–94**.
Cethosia mahratta, gregarious resting habits of, **110**.
Ceuthorrhynchus pleurostigma, stridulation in, **104**.
Ceyx gentiana, possibly attacking insects in Solomon Is., **143**.
Chalicodoma, cells from Arabia not made by, **9**.
Charaxes jasius epijasius, **136**.
charithonia, Heliconia.
Chilacis typhae, stink-gland in, **2**.
Chrysolina, spp. with red hind-wings, from France, **11**.
Chrysolina coelestina, with red hind-wings from Himalayas, **12**.
Chrysolina opulenta, with red hind-wings from Africa, **12**.
Chrysomela (see *Chrysolina*).
Cis quadridentulus, from Windsor Forest, **141**.
Coccinellomima shelfordi, as mimic of *Caria dilatata*, **137**.
coelestina, Chrysolina.
Colias croceus, third brood of, in Britain, **3**.
columbae, Lipeurus.
contractimargo, Aletis helcita.
Coracias olivaceiceps, *Phymateus morbillosus* eaten by, **18**.
Coremia designata, asymmetrical specimen of, **136**.
Creophilus maxillosus, large specimen of, **134**.
crini, Brithys.
crocale, Catopsilia.
croceus, Colias.
Cucullia lactucae, ♂ bred in Britain, **127**.
Cucullia umbratica, **128**.
Culex fatigans, relation of temperature to, **22**.
Cymothoe caenis, migration of, in Uganda, **144**.

D

Deilephila lineata, attacked by bird, **15**.
Denops albofasciatus, recorded from Britain, **112**.
designata, Coremia.
Desmodus rufus, **7**.
dia, Argynnis (Brenthis).
dilatata, Caria.
Disolia usambarensis, resembled by *Melissa* sp., **127**.
dissoluta, Aletis helcita.
diversipes, Nomia, **9**.
dominicanus, Amauris niavius.
dominula, Callimorpha.
Dorcatoma serra, from Windsor Forest, **141**.
doubledayi, Acraea.
Dynamine egaea, model of *Lucinia cadma* in Jamaica, **3**.

E

egaea, Dynamine.
electa, Catocala.
eleus, Euphaedra.
Ellipsidium aurantiacum, young of, carried by parent, **19**.
Entephria caesita norvegica, taken at North Cape, **113**.
epaea, Planema.
epijasius, Charaxes jasius.
Epinephile jurtina, attacked by bird, **16**.
erici, Aletis.
Eubajis (see *Dynamine*).
eubule, Callidryas.
eumelis, Planema tellus.
euparypha, Aletis erici.
Euphaedra, resemblance of, to *Aletis*, **104**; models of, in Africa, **106**.
Euploea unibrunnea heurippa, attacked by bird, **143**.
Eurydema festivum, imported into Britain, **142**.
Euxanthe wakefieldi, confused with *Amauris cenea*, **137**.

F

fasciata, Polybia.
fatigans, Culex.
femorella, Hilara.
ferrugineus, Leistus.
festivum, Eurydema.
Fiji, *Levuana viridescens* not attacked by birds in, **145**.
Finland, *Odezia tibiale* recorded from, **111**.
flavus, Acanthomyops.
fluvineum, Belostoma.
France, Chrysomelids with red hind-wings from, **10**.
fraxini, Hypophloeus.
freija, Brenthis.
fuliginosa, Chrysolina.

G

Galapagos, birds attacking insects in, **14**.
galii, Celerio.
galloprovincialis, Monochamus.
germanica, Oedipoda.
gilvaria, Aspilates.

glomeriformis, Perisphaeria.
graminis, Chrysolina.
grossa, Chrysolina.

H

Halcyon sancta, possibly attacking insects in Solomon Is., **143.**
harrisoni, Melipotis.
hector, Papilio.
helcita, Aletis.
Heliconia charithonia, **4.**
Herpestes galera, Phymateus morbillosus not eaten by, **18.**
Heteroptera, development of stink-glands in, **1.**
heurippa, Euploea unibrunnea.
Hilara femorella, taken at North Cape, **112.**
Hormopeza obliterata, attracted by heath fires, **146.**
Hyloicus pinastri, inhibited response to disturbance in, **128.**
hyperici, Chrysolina.
Hypnoides rivularis, taken at North Cape, **112.**
Hypophloeus fraxini, from Windsor Forest, **20.**

I

ibericus, Tychus.
Ichneumonid, taken at North Cape, **113.**
ilia, Apatura.
ilma, Liptena.
immaculicollis, Malachius bipustulatus.
India, female cockroaches carrying young in, **18** ; gregarious habits of butterflies in, **110** ; nesting association between birds and insects in, **137.**
indicus, Apis.
inferior, Miscelia.
Infra-red Photography, use of, for microphotographs, **19.**
Ips sexdentatus, **20.**
Ips (*Tomicus*) *suturalis*, from Windsor Forest, **20.**
iris, Apatura.

J

Jamaica, *Lucinia cadma* mimic of *Dynamine egaea* in, **3.**
janira, Epinephile (see *E. jurtina*).
jasius, Charaxes.
jodutta, Acraea.
juniperata, Thera.
jurtina, Epinephile.

K

Kricogonia lyside, scent-scales in, **107.**

L

labdaca, Libythea.
lactucae, Cucullia.
lapionaria, Nyssia.
Lavandula stoechus, Chrysolina americana on, in France, **11.**
Leistus ferrugineus, taken at North Cape, **112.**
Lepidoptera, modern equivalents of early English names of, **103**; times of nocturnal activity of, **141.**
Lethocerus, **2.**
Levuana viridescens, not attacked by birds in Fiji, **145.**
Libythea labdaca, migration of, in Belgian Congo, **6.**
linearis, Lyctus.
lineata, Deilephila.
Lipeurus columbae, hatching organ of, **7.**
Liptena ilma simplex, resemblance of, to Hesperiid and Lycaenid, **126.**
Locusts, in glacier in Montana, **22.**
lonicerae, Zygaena.
Lotus corniculatus, foodplant of *Aspilates gilvaria*, **2.**
Lucinia cadma, **5**; as mimic of *Dynamine egaea* in Jamaica, **3.**
Lucinia torrebia, **5.**
lycoa, Acraea.
Lyctus spp., **112.**
lyside, Kricogonia.

M

maculipennis, Anopheles.
Madagascar, habits of *Phymateus puniceus* in, **17.**
Malachius spp., from Britain, **10.**
Malaya, female cockroaches carrying young in, **18** ; *Artona catoxantha* not attacked by birds in, **146.**
Manduca atropos, **131.**
marginellus Malachius.
maxillosus, Creophilus.
media, Acraea lycoa.
Megacanthopus (see *Polybia fasciata*).
Melanophila spp., attracted by heath fires, **146.**
Melanoplus mexicanus, solitary phase of *M. spretus*, **22.**
Melanoplus spretus, from glacier in Montana, **22.**
Melipotis harrisoni, attacked by bird, **15.**
Melissa sp., resembling *Discolia usambarensis*, **127.**
mesentina, Belenois.
mexicanus, Melanoplus (see *M. spretus*).
Microphanurus painei, egg-parasite of *Axiagastus cambelli*, **139** ; oviposition habits of, **139.**
Microsania, key to British spp. of, **147.**
Microsania pallipes, recorded from Britain, **146.**
Microsania pectinipennis, recorded from Britain, **146.**
Microsania stigmaticalis, M. pallipes confused with, **146.**
milca, Vanessula.
Miscelia inferior, injured by ant, **128.**
Monochamus, British spp. of, **112.**
morbillosus, Phymateus.
Musca autumnalis, hibernating in Britain, **142.**

N

natalensis, Precis.
nebulosa, Pseudophoraspis.
nemorum, Phyllotreta.
niavius, Amauris.
niger, Tychus.
nigra, Thera juniperata.
Nomia, cells made by, from Arabia, **9.**

North Cape, insects taken at, **112.**
norvegica, Entephria caesiata.
Notonecta, **2.**
nyanza, Telipna.
Nysius, stink-gland in, **2.**
Nyssia lapionaria, **131.**

O

obliterata, Hormopeza.
ochlea, Amauris.
ochreata, Acraea althoffi.
Ochria aurago, **111.**
Odezia tibiale, recorded from Finland, **111.**
Oecophylla smaragdina, attacked by bird, **146.**
Oedipoda germanica, colour adaptation to environment in, **138.**
oloriphila, Atheta.
opheltes, Rhodafra.
opulenta, Chrysolina.
orientalis, Euphaedra eleus.
Ornithoptera victoriae rubianus, aberration of, **144.**
Otiorrhynchus arcticus, taken at North Cape, **112.**

P

painei, Microphanurus.
pallens, Phlebonotus.
pallipes, Microsania.
pancratii, Brithys.
Papilio hector, gregarious resting habits of, **110.**
Papilio ulysses, attacked by bird, **6.**
paragea, Planema epaea.
Parnassius apollo, attacked by bird, **17.**
Patrobus assimilis, taken at North Cape, **112.**
pectinipennis, Microsania.
Pentadactylus, Pterophorus.
Perilitus spp., parasite of adult beetles, **135.**
Perisphaeria glomeriformis, young of, carried by parent in Malaya, **18.**
petiverana, Tirumala.
Phalangium, taken at North Cape, **113.**
Phalera bucephala, attacked by *Picromerus bidens*, **129.**
Phlebonotus pallens, young of, carried by parent, **18.**
Phorodesma pustulata, colour varieties of, **136.**
Phryxe vulgaris, emerging from adult *Zygaena lonicerae*, **131.**
Phyllotreta atra, **135.**
Phyllotreta nemorum, *Perilitus aethiops* as parasite of, **135.**
Phymateus morbillosus, not eaten by mongoose, **18.**
Phymateus puniceus, habits of, in Madagascar, **17.**
Phymateus viridipes, not eaten by monkey, **18.**
Picromerus bidens, *Phalera bucephala* attacked by, **129.**
Pieris rapae, **108.**
pinastri, Hyloicus.
Planema epaea, forms of, from Africa, **109.**
Planema schubotzi, mistaken for *P. tellus*, **109.**
pleurostigma, Ceuthorrhynchus.
Ploceus megarhynchus, nesting association of, with *Apis indicus*, **137.**
Poinciana regia, **136.**
Polistes canadensis, **97.**
polita, Chrysolina.
Pollenia rudis, hibernating in Britain, **142.**
Polybia fasciata, nesting on electric light bulb in Trinidad, **97.**
pomona, Catopsilia.
Populus nigra, *Catocala electa* resting on, **13.**
Precis natalensis, *P. sesamus* identical with, **21.**
Precis sesamus (see *P. natalensis*).
Progne modesta, attacking insects, **15**; insect food of, **96.**
prolixus, Rhodnius.
Protective Adaptation, rejoinder to discussion of, **113–126.**
Pseudophoraspis nebulosa, young of, carried by parent, **18.**
Pterophorus pentadactylus, in cop. with body of male, **2.**
puniceus, Phymateus.
Purple Martin (see *Progne modesta*).
pustulata, Phorodesma.
Pyrameis atalanta, attacked by bird, **16**; sense-organs in tarsi of, **19.**
Pyrameis cardui, taken in mid-Atlantic, **6.**
pyranthe, Catopsilia.

Q

quadridentulus, Cis.
quadrimaculatus, Monochamus.

R

rapae, Pieris.
Repipta sp., imported into Britain, **142.**
retusus, Xylonites.
Rhamphomyia sulcata, taken at North Cape, **113.**
Rhodafra opheltes, hybrid between *Celerio galii* and, **131.**
Rhodnius prolixus, structure of climbing organ of, **12**; expansion of cuticle in, **141.**
rileyi, Acraea doubledayi.
rivularis, Hypnoides.
Rosmarinus officinalis, *Chrysolina americana* on, **11.**
rubianus, Ornithoptera victoriae.
rudis, Pollenia.
ruficornis, Nomia.
ruspina, Euphaedra.

S

Salix alba, *Catocala electa* resting on, **14.**
sanguinea, Telipna.
Sarangesa subalbicans, resemblance of, to Geometrid and Lycaenid, **126.**
sartor, Monochamus.
Saturnia carpini, source of scent produced by, **19.**
schubotzi, Planema.
Scolopostethus, stink-gland in, **2.**
Scopoli, further complete copies of "Entomologia Carniolica" recorded, **1.**
scotica, Thera juniperata.
Semiothisa subcretata, resemblance of, to Hesperiid and Lycaenid, **126.**
sennae, Callidryas (see *C. eubule*).
serra, Dorcatoma.
sesamus, Precis.

sexdentatus, Ips.
shelfordi, Coccinellomima.
simplex, Liptena ilma.
smaragdina, Oecophylla.
Society of Entomologists of London 1780–82, Diary and Proceedings of, **97.**
Solomon Islands, birds attacking insects in, **143** ; aberration of *Ornithoptera victorianae rubianus* from, **144.**
speciosa, Calliprobola.
spretus, Melanoplus.
Stauroderus bicolor, **139.**
stigmaticalis, Microsania.
striatum, Anobium.
subalbicans, Sarangesa.
subcretata, Semiothisa.
sulcata, Rhamphomyia.
sutor, Monochamus.
suturalis, Ips (*Tomicus*).
sykesi, Acraea doubledayi.

T

Telipna spp., **106.**
tellus, Planema.
Temperature, relation of, to environment, **22.**
Tessaratoma papillosa, **141.**
Thera juniperata, notes on larva of, **134.**
Thera juniperata nigra ab. n., from Britain, **135.**
thetis, Agriades.
tibiale, Odezia.
Tirumala petiverana, assembling for rest, **145.**
Tomicus (see *Ips*).
torrebia, Lucinia.
Tychus ibericus, recorded from Britain, **144** ; previously confused with *T. niger,* **144.**
Tychus niger, recorded as *T. ibericus* from Britain, **144.**
typhae, Chilacis.

U

ulysses, Papilio.
umbratica, Cucullia.
unibrunnea, Euploea.
usambarensis, Discolia.

V

Vanessula milca, model of Lycaenid, **127.**
vanillae, Agraulis.
victoriae, Ornithoptera.
viridescens, Levuana.
viridipes, Phymateus.
vulgaris, Phryxe.

W

wakefieldi, Euxanthe.
Wasps, avoiding printers' ink, **135.**
West Indies, wasp nesting on electric light bulb in, **7.**

X

Xylonites retusus, **112.**

Z

Zephyranthes candida, Brithys sp. feeding on, in Britain, **112.**
zetes, Dynamine (see *D. egaea*).
Zygaena lonicerae, Phryxe vulgaris, emerging from adult of, **131.**

ERRATA.

Page 103, line 11, for *Schistostege decussata* **read** *Eupithecia venosata.*
Page 103, line 14, for *Thalera fimbrialis* **read** *Hemithea aestivaria.*

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